The Iron A

A Review of the Hardware, Iron and Metal Trades.

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In order to facilitate the handling of heavy cases of merchandise, boats, parts of ma-chinery, &c., and save the time wasted in de-taching slings or hooks, Mr. C.C. Lawrence, of London, England, has devised a block which London, Eagland, has devised a block which possesses some merit. It is formed of two cheeks or plates riveted together through a cast-iron arched piece, round which the hauling chain is passed. The chain is kept in its place by a bossor stud which prevents it coming out of the groove in the block. The end of the chain terminates in a slotted shackle, C, which is passed over the two hooks at the bottom of the block. One of these hooks, A, is fixed, while the other, B, is free to swing upon a pin in its upper end. This latter is the detaching hook, while the former may be used for the other end of the sling, and will thus draw the sling away when one end is released. The detaching is effected by a light releasing cord, carried back over the jib of the crane to the man in charge commended for cargo, as any form of detachment which would allow the load to be released when in mid-air would be highly dangerous.

dangerous.

The special value attaching to the use of this block is that the man at the crane can lower away and detach his fall chain without assistance from any one else. If the slinging chain is jammed round the bale it may be left behind entirely if it is attached only to the swinging hook, and the transference of the goods may be much facilitated by the use of several slinging chains. this block is that the man at the crane can

Hydraulic Pumping Motor.

The accompanying cuts represent an apparatus for raising water by means of a hydraulic engine, which in many respects resembles a steam pump. Water under pressure actuates a piston within a cylinder. To the piston rod two pump plungers, or pistons, are attached. By means of these water may be raised to any desired elevawater may be raised to any desired eleva-tion. The machine might be shortly described as a steam pump driven by a column of water under pressure. As the driving column has much less pressure than that which is driven, the apparatus has most of the characteristics of "heavy-pressure"

pumps.

Figure 2 shows a longitudinal section through the apparatus; C is the main, or working, cylinder, and D the driving piston by which the two pump plungers F F are driven; G G are the pump cylinders and H H the pipes which carry the water to the air chamber. The piston rod E carries the piston D and the two pump plungers F F. The latter chamber. The piston rod E carries the piston D and the two pump plungers FF. The latter are both furnished with valves opening outward. It must be observed that the drawing is somewhat inaccurate, as the piston D is really fastened at the center of the piston rod E. When the water pressure forces the whole piston system to the left, the water in the left, hand pump cylinder is forced into the left hand plunger opens and water enters the right-hand plunger opens and water enters the right-hand pump cylinder. At the following stroke the action is, of course, reversed. So far the operation is very simple, but the details of the apparatus for carrying this out are very ingenious, and show that the designer had pretty carefully studied the subject. The manner in which the ideas have been put in iron show, however, that

The Lawrence Cargo Block.

In order to facilitate the handling of heavy

the rod S, and are the real agents by which the valves are moved. The moment they pass the vertical and are inclined toward the right, they fall forward in that direction, and, in doing so, move the arms N and O and reverse the valves B B. The valve motion is entirely automatic, the main piston bringing the weighted levers, before it fin-ishes its stroke, into such a position that they can, by gravity, trip the valves and so reverse the motion. The valves B B are double-seated poppet valves, although they are not balanced. When they close against the water column, they have a very much SCIENTIFIC AND TECHNICAL.

In a paper on

THE COLOR RELATIONS OF METALS, and notably on those of copper, nickel, co-balt, iron, manganese and chromium, lately read before the Chemical Society, Mr. T. Bayley records some remarkable relations between solutions of these metals. It ap-

pears that iron, cobalt and copper form a natural color group, for, if solutions of their sulphates are mixed together in the proportions of 20 parts of copper, 7 of iron and 6 of cobalt, the resulting liquid is free from salts of manganese are identical in color with the cooler salts, identical in color with the cooler salts, identical in color with the color with color with

This analogy is even more general, for Mr.
Bayley states that in the case of iron, cobalt and copper, the mean wave length of the light absorbed is proportional to the atomic weight. The specific chromatic power of the metals varies, being least for copper. The specific chromatic power increases with the affinity of the metal for copper. the afficity of the metal for oxygen. Chromium forms three kinds of salts—pink salts, identical in color with the cobalt salts;

which are commencing to attract so much attention abroad. They are rendered luminattention abroad. They are rendered luminous by coating the petals with transparent size, and then dusting them with a phosphorescent substance, such as Canton phosphorus (sulphide of calcium) or Bologna phosphorus (sulphide of barium), the first named being considered the best, and yielding a soft yellow light. According to M. Becquerel, a good quality can be made by mixing 43 parts of flowers of sulphur with 53 parts of calcined oyster shells, and raising them to a temperature of between 800° and 900° C. Exposed to sunlight during the day, the flowers become brightly luminous at night. Mr. Charles S. Hastings, of the Johns Hopkins University, sums up a

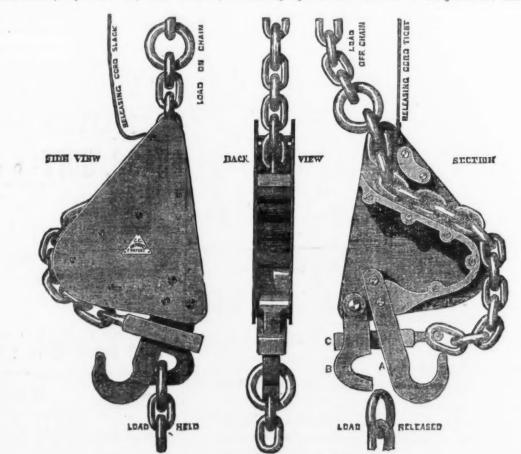
A THEORY OF THE CONSTITUTION OF THE SUN, advanced by him in a recent issue of the American Journal of Science: "Convection currents, directed generally from the center of the sun, start from a lower level, where the temperature is probably above the vaporizing temperature of every substance. As these currents move upward they are as these currents move upward they are cooled, mainly by expansion, until a certain element (probably of the carbon group) is precipitated. This precipitation, restricted from the nature of the action, forms the well-known granules. There is nothing which has come under my observation which would indicate a columnar form in these granules under ordinary circumstances. The granules under ordinary circumstances. The precipitated material rapidly cools on account of its great radiating power, and forms a fog or smoke which settles slowly through the spaces between the granules till revolatilized below. It is this smoke which produces the greatly shown in the limit of the cool produces the general absorption at the limb and the 'rice grain' structure of the photo-sphere. When any disturbance tends to in-crease a downward convection current, there is a rush of vapors at the outer surthere is a rush of vapors at the outer surface of the photosphere toward this point. These horizontal currents or winds carry with them the cooled products of precipitation, which, accumulating above, dissolve slowly below in sinking. This body of 'smoke' forms the solar spot. The upward convection currents in the region of the spots are bent horizontally by the centripetal winds. Yielding their heat now by the relatively slow process of radiation, the loct of precipitation are much elongated, thus of precipitation are much elongated, thus giving the region immediately surrounding a spet the characteristic radial structure of the penumbra."

M. Blondlot has communicated the results

of some investigations on

A NEW PROPERTY OF SELENIUM, A NEW PROPERTY OF SELENIUM, which is of timely interest in view of the famous researches of Bell and Tainter.

M. Blondlot finds that when a piece of annealed selenium is connected to one pole of a Lippmann capillary electrometer, by means of a platinum wire, and a plate of platinum is similarly connected to the other pole, a comparatively powerful electric current is developed by rubbing the selenium against the platinum plate, as is shown by the deflection on the plate, as is shown by the deflection on the electrometer scale. Mere contact between the selenium and the metal produces no de-



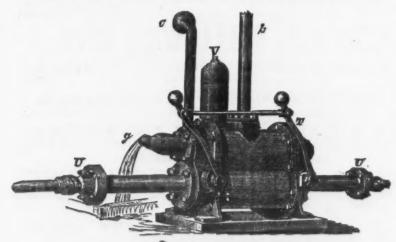


Fig. 1 .- Elevation of the Apparatus at Work

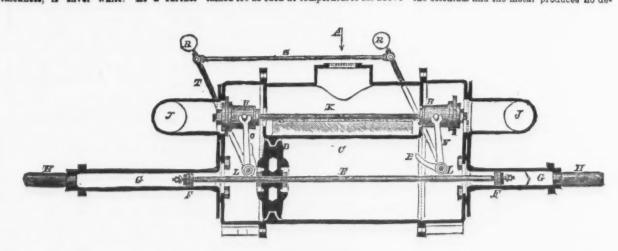


Fig. 2.-Longitudinal Section.

ward, and presses the piston D toward the right. Just as the piston reaches the end of the stroke, it strikes the tappit arm P, which is hung upon the shaft L, lifting it up and the Pittston Goal Company's twin shaft, at bringing, at the same time, the weights R R and reds T T a little past the vertical posis

the inventor either had poor workshop fa-cilities or was not up to the American stand-ard of mechanics.

Both outlets of the pump cylinders are Both outlets of the pump cylinders are

When once set in motion, the pump is entirely automatic and continues in operation is long as there is water to furnish the power.

Consequence, it follows that a mixture of iron (7 parts) and cobalt (6 parts) is identical in color with a plate of copper. The resemblance is so striking that a silver or platinum clude that unless the pressure upon a solid As if to take the effect still further out of Both outlets of the pump cylinders are connected by bent pipes with an air chamber, V, at the back of the apparatus. In from the hydraulic ram, and entails very from the hydraulic ram, and entails very much less strain upon pipes and connections. The rising pipe is shown at C.

Returning to Fig. 2, we will attempt to trace the action of the machine through a single stroke. Water enters at A, in the direction of the arrows, into the chamber K. In the position of the valves shown, it passes toward the left past the valves B and downward, and presses the piston D toward the solutions are almost complementary to co-balt solutions, but they transmit an excess of yellow light. Now, the atomic weight of of yellow light. Now, the atomic weight of nickel is very nearly the mean of the atomic weight of iron or copper, but it is a little lower—that is, nearer to iron. There is thus a perfect analogy between the atomic globes in the manner publicly described by weights and the color properties in this case.

In carbons are the recommonly called parchment—commonly called parchment paper—cut into strips and louding points out, flow through the electrometer from the hot selenium surface to the cold one, or in precisely the opposite direction; hence the novel effect cannot be due to heat developed by the friction.

MYDRAULIC PUMPING MOTOR.

The Electrician makes the following statement in regard to the carbons used in

THE SWAN ELECTRIC LIGHT, which is similar to that of Edison, and which

As if to take the effect still further out of the category of those already recognized, M. Blondlot has verified the facts that vessel covered to the proper depth with such a solution is indistinguishable from copper.

There is a curious fact regarding nickel also worthy of attention. This metal forms solutions which can be exactly simulated by a mixture of iron and corper solutions, but the state that the data that the state that the data that the category of those already recognized, M. Blondot has verified the facts that maker, writes to Nature that he has independently arrived at Dr. Carnelly's results. against a metal, nor two isolating substances, can produce a change in the capillary elec-trometer. The current flows through the electrometer from the unrubbed to the rubbed surface of the selenium. Now a it is claimed it antedates. The carbons are thermo-electric current set up by heating a made of vegetable parchment—commonly selenium-platinum junction would, as M. Blondlet parchment paper—cut into strips and

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BY EDWARD KIRK.

BATH FOR REDUCING THE WEIGHT OF IRON PATTERNS.

Iron patterns are sometimes cast a little heavier than they should be, and to make the casting of the proper weight, the weight of the pattern must be reduced. This can be done by scraping and filing the surface of the pattern, but this requires a great deal of labor, and a much cheaper and a more even way of reducing the weight of patterns is to eat off the surface with acids. A good bath for this purpose is made of one part muriatic acid, ten parts sulphuric acid and twelve parts water. The patterns to be reduced are put into this bath and allowed to remain in it for a short time. They are then taken out, washed in clear water and weighed. If not reduced enough, they are returned to the bath and allowed to remain until they are. They are then taken out, washed in clear water, placed in an alkaline bath and allowed to remain a short time to neutralize the effect of the acid upon the iron; after which they are washed and filed and finished in the ordinary way.

BEESWAX FOR IRON PATTERNS.

Founders sometimes have considerable trouble to get pure beeswax for their iron patterns, for some farmers have a habit of adulterating their beeswax with sheep' tallow, and beeswax containing tallow can not be used upon iron patterns, for it will not harden, and will cause the sand to adhere to the pattern rather than prevent it from doing so. To harden the beeswax so that it will give a smooth, hard surface to the pattern, various materials have been added to it by founders; among these are gutta-percha and rosin. When gutta-percha is used, it is cut or broken into small pieces, and a small amount of it is melted with the wax. It has the effect of hardening the wax and gives the pattern a hard, dark inish that works beautifully if it is properly brushed up and finished; but it requires such more labor to brush and finish a pittern coated with beeswax and guttapercha than one coated with the pure wax, and the finish does not last any longer than the pure wax finish. When rosin is used, it is broken up and melted with the wax in the same way as gutta-percha. It has the effect of hardening the wax, and gives the pattern about the same fluish as gutta-percha pattern about the same finish as gutta-percha and wax, but it is very liable to crack and scale off, especially in cold weather, and for this reason it is but very little used. The best way to prepare wax for use in patterns, and that adopted by most founders, is to heat it to a high temperature and boil it well, to drive off any impurities it may contain, and to harden it. It is then applied to the pattern in its pure state, and will give as good a finish as if mixed with any other material that has yet been tried. Beeswax cut with turpentine and made into a thick paste, has been extensively used for waxing paste, has been extensively used for waxing patterns and keeping them in order while in use. This mixture is rubbed upon a hard brush and brushed upon the pattern while cold, and the turpentine soon evaporates, leaving a thin coat of pure wax upon the pattern. Some years ago, in many of the large stove foundries, every molder was supplied with a small box of this mixture and a hard brush, and was expected to keep his own patterns in order by brushing on a little of it every few days. But it was soon found that the wax would accumulate on the sides of the small ribs or other projec-tions on the pattern, destroying the draft of the pattern and doing more harm than good. This mode of waxing patterns has therefore been abandoned as a failure.

Iron in Ohio.

In his forthcoming annual report of the Birean of Labor Statistics, Commissioner H. J. Walls gives the following in regard to the iron interests of Ohio:

The condition of the iron industry of the State, as represented by its furnaces, iron mills and foundries, at the close of the year 1880, is a subject for congratulation. The past 18 months have wrought wonderful change in that condition. The year 1879 opened with more than half the furnaces and iron mills closed, the immense capital nvested in them bringing no returns, the thousands of workmen formerly employed therein crowding the other already crowded industries, many suffering for the necessaries of life, and the prospects for the future looked gloomy indeed.
"The close of the year 1880 finds the fur-

naces and iron mills more generally in opera-tion than at any time in the past eight years, and with almost double the number of persons employed that were employed in 1879, and with more employed than ever

state.

"In 1878 there were 190 blast furnaces reported to the Bureau, of which 53 were in blast, and 56 out of blast, and 5153 persons were employed. In October, 1880, there were 106 blast furnaces, of which 77 were in blast, and 29 out of blast (some of which have gone into blast since October), giving employment to 9796 persons.

"In 1878, the returns to the Bureau, finite blast is being erected in Columbiana county.

"In 1878 there were 190 blast furnaces, of mills, employing 7784 persons; in 1879, 34 mills, employing 7784 persons; in 1880, 47 mills, employing 10,746 persons; in 1880, 47 mills, employing 10,746 persons; in 1880, 47 mills, employing 10,746 persons.

One mill in operation in 1879 was cold in 1880, and mills not in operation in 1879 was cold in 1

employment to 9790 persons.

"In 1878 the returns to the Bureau showed 45 firms owning rolling mills. Of these, 26 firms had their mills in operation, giving employment to 5,000 persons. In October, 1830, out of the 44 mills in the State, 47 were in operation, giving employment to 10,745 persons.

"Many of the furnaces buy their ore and

coal, nearly all the mills buy their iron and coal, so that the increase of the number of persons directly suployed at the furnaces and mills does not show the total increase of persons employed by the revival of the iron business. Undoubtedly a great impetus has been given to the production of coal by the

revival in the furnaces and mills.

"It would be difficult to trace the farreaching effects of the change. Foundries,
machine shops, railroads and other industries
are all more or less benefited, and the ability of workingmen to purchase and consume having been increased, there is scarcely any industry in the State that has not profited from the facts as herein set forth."

The total iron and steel manufactured in 1879 was 305,405 tons, classified as follows;

Papers on Practical Founding .- XIV. the location of each furnace, when built,

size and capacity.

From a table which accompanies the report it appears that there are in the State 73 furnaces which use coal and coke and 33 charcoal furnaces; 52 of the coal and coke stacks are "in" and 21 "ont;" 25 of the charcoal are in and 8 out. There are now 9796 hands employed, as against 5965 in 1879. Jackson County comes first in the number of stacks, having 18, of which number 11 are in; Lawrence County is second with 18 stacks and 14 in; Mahoning comes third with 14 stacks, of which 12 are in.
The next highest on the list is Perry County

with 7 stacks, and so down to 1.

The relative production of coal and coke iron and charcoal iron in Ohio for the years named is as follows:

-Coal or coke. -Tons. Per ct.

Of the 1,438,978 tons of coal or coke (bitu-minous) made in the United States, Ohio produced 404,306 tons, or 28 per cent. of the whole, and of the 358,873 tons of charcoal

iron made, Ohio produced 43,445 tons, or 12 per cent. of the whole. A summary of the number and wages of miners of ore and coal at blast furnaces is given in this table:

Employees.	No.	Av. weekly wages.		
	40.	1880.	1879.	
Ore miners	1,116	12.23 6.38	\$6.82 10.13 94.88	
Total	4,801	\$9.20	\$8.0	

Fifty-three of the above were employed rolling mills, leaving 4,748 employed the furnaces making returns, which, added to the 2114 employed at the furnaces, makes a total of 7662 persons directly employed in the working of 56 furnaces.

Fifty six of the furnaces in blast made returns to the bureau, snowing the following employees and average wages

Employees. No.		Av. wag	
zmproy ces.	210.	1880.	1879.
Keepers	164	\$11.38	89.73
Filers	370	10.25	9 58
Mechanics		12.34	11.90
Other employees	647	9.22	7.94
Total	2,614	\$9.21	88.34

Mr. Walls says: Forty-seven firms in the State own or operate 54 rolling mills, located in the following counties: Belmont, 3; Columbiana, 2: Cuyahoga, 10; Erie, 1; Franklin, 2; Hamilton, 5; Jefferson, 1; Lawrence, 3; Mahoning, 8; Muskin-cum, 1; Meigs, I; Scioto, I; Stark, 2; Summit, I; Trumbull, 7; Tuscarawas, I and Washington I.

The oldest mill in the State was erected at Portsmouth in 1832. In 1851 there were seven mills. In 1852 four were erected. In 1862 there were 15 mills; in 1872 38 mills, and in 1880 54 mills. Four mills built in 1867, 1868, 1870 and 1874, and located in Ashtabula, Columbiana, Licking and Stark counties, respectively, have been disman

The mills intact contain the following number of furnaces and machinery: Puddling furnaces, 682; scrap furnaces, 11; heating furnaces, 268; trams of rolls, 178; nail machines, 420; steam hammers, 29; squeezers, 3; and spike machines, 8. The capacity of the mills is about 675,000 tons of manufactured iron and steel annually. Seventeen of the mills make rails, only one making steel rails.

The steel works are classified as follows: Making Bessemer stoel, I; crucible steel, 2; open hearth steel, 5: puddled steel, I;

rolling steel, 3.

The following table gives the location of the mills; I, the number of mills, II, number in operation, and III, the number of

cmbros ces .			
Counties.	I	II	TIE
Belmont	3	3	960
Columbiana	3	2	252
Cuyahoga	10	9	1,985
Erie	2	2	104
Franklin	2	2	550
Hamilton	5	5	470
Jefferson	2	1	350
Lawrence		3	8,308
Mahoning	8	8	2,363
Muskingum	8	1	316
Meigs	8	I I	325
Scioto	3	3	585
Stark	2	2	235
Summit	2	2	220
Trumbull		7	1,160
Tuscarawas	- 8	I.	100
Washington	1.		
	-	_	-
Totals	54	47	10.746

In October, 1878, 25 mills were in operation, employing 5400 persons; in 1879, 34 mills, employing 7784 persons; in 1880, 47

paid employees in 1880 as compared with 1879:

Employees.	1980.	2879
oremen	23.00	
leaters	20.48	\$37.80
uddlers	82.98	20.49
ollers	35.75	32.83
atchers, &c	13 50	*****
ther mechanics		13.05
lelpers		20.10
aborers	7.50	7.47
ailers	34.02	35.46
ail feeders		
oys		5.90
ther employees	9.86	*****

The report gives a number of tables of comparative production of the mills for several The following is a summary of the

whole:	
Years. Iron.	
1874 293,00	17,223
1875 209,62	
1876 209,17	8 40,350
1877 208,10	9 36,139
1878	53,349
1879 238,02	5 66.486

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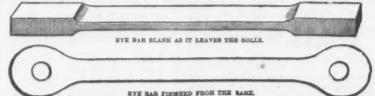
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An interesting table is also given of the card prices of bar iron and nails during a series of years, from which it appears that the card rates are fixed by the Western Iron and Nail Association. August 16, 1879, bar iron was quoted at 2 2-10 cents per pound. September 1, at 2 5-10 cents; September 29, 3 cents; January 5, 1880, 3½ cents; February 2,4 cents; April 12, 3 3-10 cents; and on May 10, at 12½ cents. Nails followed in the same general direction, advancing from \$2 per keg in September, 1879, to \$5.25 in February, 188e, and fading to \$3 in July, 188e.

The wages of iron workers, who worked by the ton, fluctuated with the price of bar

iron. From \$5 per ton for puddling, the price advanced to \$7.25 per ton in February, 1830, and in December, 1880, the price was \$5.50 per ton. Other millmen working by the ton experienced the same changes in wages during the year.

Mexico and its Resources.

Mexico, to-day, is attracting more atten-tion and interest among railroad and mining men than any other part of our continent. The splendid mineral and agricultural resources of that country are generally known, sources of that country are generally known, but without either railway transportation or a settled government, and with a comparatively undeveloped territory, during past years it has attracted little or no American capital. Now, however, that railroads have traversed the agricultural and mining regions of the West; that the Southern Pacific through New Mexico, Arisona and California, passing near the borders of Chihuahua and Sonora, will be open for through traffle by January 1st. 1881. open for through traffle by January 1st, 1881, and now that the long and peaceable presidency of Diaz has been practically extended under his friend and advisor, Gonzales, Mexico is fast coming to be re-

garded with just favor by capitalists.

Lands, mines and mining real estate are not taxed in Mexico, the only impost being a mint tax on bullion. Mining laws there are more liberal than in the United States. Mining and agricultural machinery are introduced free of duty. The anxiety of the better class of Mexicans to have Americans invest capital in mining and other industrial enterprises, and the almost absolute control which the intelligent few exercise over the masses of the population, guarantee a protection to such investments equal to that afforded in the Western Territories of the United States. The climate in the mining regions of Mexico is favorable to outdoor operations during the entire year. The rains commonly begin the latter part of June and commonly begin the latter part of June, and, continuing until the middle of September, reoccur through January and February. This insures a luxuriant growth of nature grasses and favors agricultural and pastoral

pursuits. The richest mining districts are those near the northern borders of the republic, where an abundant supply of timber for mining purposes is found near the bases of the depurposes is found near the bases of the detached mountains, in which the metalliferous veins are found. The States of Sonora, Sinaloa and Chihuahua, are in this respect more favored than Arizona. It is a fact, perhaps, not generally known, that extensive and valuable deposits of coal exist in Northern Mexico, which the projected railway system will soon render available. One of the difficulties encountered in Northern Mexico, however, notwithstanding its semi-annual rains, is a scarcity of running streams. rains, is a scarcity of running streams, though in some sections water is found in though in some sections water is found in great abundance. In acquiring mining or agricultural property there, it is important to secure a supply of water to insure success. Skilled American labor costs there no more than in the neighboring territories of New Mexico and Arizona, while the native laborers, who are excellent miners, can be bired at from Ext. to \$20 per great The hired at from \$15 to \$30 per month. The valleys of Northern Mexico are narrow, but when irrigated are exceedingly fertile. They produce the cereals and fruits of the temperate zone, as well as sugar cane, tooo and semi-tropical fruits

abundance and perfection.

The Guaymas and El Paso Railway, now The Guaymas and El Paso Railway, now being built from Guaymas, on the Gulf of California, via Hermosillo to El Paso, through the Sonora River Valley, will, upon its early connection with the Atchison, Topeko and Santa Fe Railroad, open a ready and increasing market for the peculiar products of that region. When American machinery, capital and mining methods are employed in that country, and when the railroads now building are completed, an enormous increase must take place in mineral and agricultural production and values. Independent of this the influx of American Independent of this the influx of American capital and population, now setting in that direction, will secure an immediate advancement of values there.—New York Mining Record.

One of the most interesting objects offered to public inspection at the Sydney Interna-tional Exhibition was a dwalling house extional Exhibition was a dwalling house ex-clusively made of paper, and furnished throughout with articles manufactured from the same material. Walls, roof, floorings and staircases alike consisted of carton-pierre; the carpets and curtains, bedsteads, lamps, sheets and counterpanes, towels, bootjacks, baths, kitchen utensils, &c., were one and all preparations of papier-maché, as were the very stoves used for heating the rooms, in which large fires were kept burning daily throughout the duration Reystone Horse Shoe Co.,

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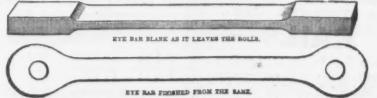
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An interesting table is also given of the An interesting table is also given of the card prices of bar iron and nails during a series of years, from which it appears that the card rates are fixed by the Western Iron and Nail Association. August 16, 1879, bar iron was quoted at 2 2-10 cents per pound, September 1, at 2 5-10 cents; September 29, 3 cents; January 5, 1880, 3½ cents; February 2, 4 cents. April 12, 2, 2, 10 cents September 1, at 2 5-10 cents; September 29, 3 cents; January 5, 1880, 3½ cents; February 2, 4 cents; April 12, 3 3-10 cents; and on May 10, at 12½ cents. Nails followed in the same general direction, advancing from \$2 per keg in September, 1879, to \$5.25 in February, 1880, and faling to \$3 in July, 1880.

The wages of iron workers, who worked by the ton, fluctuated with the price of bariron. From \$5 per ton for puddling, the price advanced to \$7.25 per ton in February, 1880, and in December, 1880, the price was

1830, and in December, 1880, the price was \$5.50 per ton. Other millmen working by the ton experienced the same changes in wages during the year.

Mexico and its Resources.

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Lands, mines and mining real estate are not taxed in Mexico, the only impost being a mint tax on bullion. Mining laws there are more liberal than in the United States. Mining and agricultural machinery are introduced free of duty. The anxiety of the better class of Mexicans to have Americans invest capital in mining and other industrial enterprises, and the almost absolute control which the intelligent few exercise over the masses of the population, guarantee a protection to such investments equal to that afforded in the Western Territories of the United States. The climate in the mining regions of Mexico is favorable to outdoor operations during the entire year. The rains commonly begin the latter part of June, and, continuing until the middle of September, reoccur through January and February. This insures a luxuriant growth of nature grasses and favors agricultural and pastoral pursuits.

The richest mining districts are those near

the northern borders of the republic, where an abundant supply of timber for mining purposes is found near the bases of the de-tached mountains, in which the metalliferous veins are found. The States of Sonora, Sinaloa and Chihuahua, are in this respect more aloa and Chinuanua, are in this respect more favored than Arizona. It is a fact, perhaps, not generally known, that extensive and valuable deposits of coal exist in Northern Mexico, which the projected railway system will soon render available. One of the diffi-culties encountered in Northern Mexico, cuties encountered in Northern Mexico, however, notwithstanding its semi-annual raiss, is a scarcity of running streams, though in some sections water is found in great abundance. In acquiring mining or agricultural property there, it is important to secure a supply of water to insure success. Skilled American labor costs there no more than in the neighboring territories of New Mexico and Arizona, while the native laborers, who are excellent miners, can be hired at from \$15 to \$30 per month.
valleys of Northern Mexico are narrow, when irrigated are exceedingly fertile. They produce the cereals and fruits of the temperate zone, as well as sugar cane, to-bacco and semi-tropical fruits, in great abundance and perfection

abundance and perfection.

The Guaymas and El Paso Railway, now being built from Guaymas, on the Gulf of California, via Hermosillo to El Paso, through the Sonora River Valley, will, upon its early connection with the Atchison, Topeko and Santa Fe Railroad, open a ready and increasing market for the peculiar products of that region. When American machinery, capital and mining methods are employed in that country, and when the railroads now building are completed, an enormous increase must take place in mineral and agricultural production and values. eral and agricultural production and values. Independent of this the influx of American capital and population, now setting in that direction, will secure an immediate advance-ment of values there.—New York Mining

One of the most interesting objects offered to public inspection at the Sydney Interna-tional Exhibition was a dwalling house exthonal Exhibition was a dwelling house ex-clusively made of paper, and furnished throughout with articles manufactured from the same material. Walls, roof, floorings and staircases alike consisted of carton-BRADLEE & CO.

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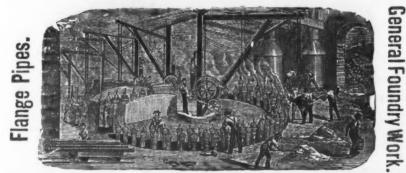
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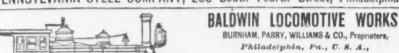
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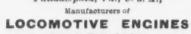
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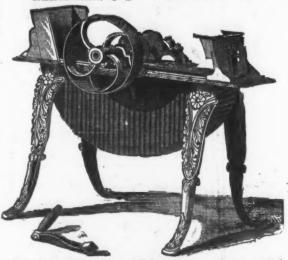
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The Genesis of Iron Ores.

Prof. T. Sterry Hunt, in a paper read be-fore the Association for the Advancement of Soience, has, in an admirable way, summed up the present status of our knowledge of the chemical reactions which have led to the formation of iron ore deposits: Iron is generally present in mineral silicates

in the crystalline rocks in a ferrous condition, and liberated therefrom by the sub-aerial de-cay of these as hydrous ferric oxide. This is by the agency of organic matter again reduced to ferrous oxide, which is dissolved in natural water by carbonic acid or some organic water by carbonic acid or some organic acid, from which solutions it may be deposited either as hydrous peroxide (limonite, &c.) as carbonate (siderite), as silicate or as sulphide (pyrite, &c.), in all of which forms iron is found in sedimentary deposits. As regards the formation of siderite, he describes experiments which show that solutions holding five grams of ferrous carbonate dissolved as dicarbonate in a liter of water, are spontaneously decomposed in water, are spontaneously decomposed in close vessels at the ordinary temperature, and deposit two-thirds of their iron as a white crystalline (hydrated) mono-carbonate, with liberation of carbonic acid. This with liberation of carbonic acid. This serves to render more intelligible the reduction and segregation of iron as siderite in earthy sediments, as long since pointed out by W. B. Rogers, for the ores of the coameasures. The intervention of soluble sulphates and their reduction through organic agency to sulphides, determines the formation of sulphide of iron in sediments. The generation of a bisulphide (pyrite or marcasite) was then discussed, and it was shown that the ferrous monosulphide which naturally is first generated. and it was shown that the ferrous mono-sulphide which naturally is first generated, may fix a further portion of sulphur and thus form a more stable compound. One example of this is seen when recently precipitated hydrous ferrous sulphide is brought in contact with a solution of a ferric salt, which takes up a portion of the iron, leaving sulphur free to unite with the undecom-posed sulphide, and form therewith a very stable higher sulphide of iron. Experiments now in progress lead to the belief that sulphur liberated from soluble sulphides that sulphur liberated from soluble sulphides may, in a similar manner, unite with ferrous sulphide, and thus help us to explain the generation of pyrites in Lature, in the presence of water, at ordinary temperatures. The changes of siderite and pyrite under atmospheric influences were next considered. The latter by oxidation yields, as is well known, ferrous sulphate. Its frequent conversion by sub-ærial decay into limonite was conceived to be due to the intervention conversion by sub-ærial decay into limonite was conceived to be due to the intervention of water-holding carbonates, which, conjointly with oxygen, change it into hydrous peroxide (limonite), which often retains the form of the pyrites. The transformation of carbonate of iron into hydrous peroxide is a familiar fact. Limonite ores may thus be produced in three ways. They are sometimes formed by the peroxidation and pretimes formed by the peroxidation and pre-cipitation of dissolved ferrous salts, as in the so-called bog ores; but more frequently from the alteration in situ of deposit of

Internal Taxation in Great Britain.

If any one believes that a consumer in Great Britain derives any advantage in the long run from the fact that only a few imports are taxed, he has only to examine the statistics of home taxation, showing the sources whence the government derives the revenue not raised by imposts.

A Parliamentary return just published in England gives the particulars in detail of all taxes and imposts from which the imperial revenue of the United Kingdom is raised, together with the gross amount yielded by such tax or impost, and the cost or charge for collecting the same under each head. The three main sources of imperial revenue The three main sources of imperial revenue in the United Kingdom are the inland revenue, customs and post office. For the financial year ending the 31st March last, the inland revenue yielded £46,452,454, the customs £18,165,530, and the post office £3,053,134, or a grand total of £67,671,118. These were the results obtained after deductive the sector of collections high results of the sector of the secto ing the costs of collection, which amounted in the case of the inland revenue to £1,916, 406, the customs to £1,005,556, and in the case of the post office to £5,220,794. The receipts from inland revenue are divided under three chief heads—excise, stamps and taxes. The excise last year yielded a net revenue of £25,218,303; stamps, £11,306, licenses. The amount received under these various beads was not less than £1,454,569. So that the total revenue received in the shape of duties on liquor and licenses for the manufacture and sale of it amounted to over £28,604,381. If to this sum be added the amount received in the shape of customs duties on tobacco, £8,630,567, it brings up the revenue received on account of those two luxuries to the enormous sum of £37,-234,048, being considerably more than one-half of the total net revenue of the United Kingdom obtained from taxation. Next in importance to the inland revenue and customs duties come the direct taxes levied on build 23 miles of road between Belvidere and

the country. These consist of the land tax the inhabited house duty and income tax.
The total receipts last year from these three The total receipts last year from these three sources amounted to £12,024,216. Of this the proportion for income tax was £9,359,522; for inhabited house duty, £1,602,680; and for land tax, £1,071,004. The income tax last year was levied at the rate of 5d. in the £, and it realized over £9,350,000. The third source of income under the head of inland revenue, is the stamp duties, including legal deeds and instruments of all of inland revenue, is the stamp duties, including legal deeds and instruments of all kinds, probates of wills, letters of administration, and such like. The total receipts under these various heads last year amounted to £11,527,040. Probate and legacy duties realized £2,677,861, and legacy and success on duties, £3,722,022. The aggregate net revenue for 1879-80 was nearly two milions less than during the previous year. There was a deficiency of nearly a million in the inland revenue receipts alone, and of over a light of the state o inland revenue receipts alone, and of over a million in the receipts from customs duties. The receipts from the post office, on the other hand, showed an increase of nearly £200,000.

Our Trade With China.

In the year 1879, the last for which official eports have been published, we sent to the

Chinese, besides wheaten flour:	it to the
locks, to the value of	
Notions colored	
Cottons, colored	
Cottons, uncolored	1,300,000
Drugs and chemicals	13,700
Hassware	. 14,cog
Silver bullion	1,831,000
Machinery	0.000
Other from manufactures	0.00%
rirearms	. 17,000
Lamps	. 22,000
Kerosene	
Ordnance stores	
Provisions-such as bacon and othe	9,000
meats, butter and cheese, &c	
Defined sugar	42,000
Refined sugar	. 7,000
Tobacco	52,000
Clothing	10,000
Total	

The sum total is not great, but the list shows how varied are the Chinese demands which our producers and manufacturers can which our producers and manufacturers can supply, and it is curious to remark that the old time Yankee superiority in clock making makes itself felt in an export to China of \$50,000 worth of these. It is clear enough that the best interests of the United States require a friendly understanding with a people who are so numerous and so thrifty, and to whom our own people can supply so many articles in the growth or weather many articles in the growth or manufacture of which we excel the world. English papers of recent date contain ex-

tracts from their Chinese consular reports just published for the last year, which show just published for the last year, which show that the Americans are fast gaining entire coutrol of the Chinese markets with their cotton goods. We called attention to this fact in 1878, but the progress of our manufacturers has been much more rapid sit ce then. "At Chenkiang," reports the English Consul, "the import of English drills decreased between 1878 and 1879 from 63,725 pieces to 39,620, while the import of American drills increased from 9735 to 24,285 pieces." At Shanghai the American increase of importation surpassed that of the English pieces." At Shangnai the American increase of importation surpassed that of the English and Dutch together by 95,159 pieces. In sheetings our progress at the same port was still more marked. In 1878 we exported 390,000 pieces; in 1878, nearly double—655,773; while the English increase was only 13,565. At Tientsin the increase in American imports of drills during the second 13,505. At thenesin the increase in American imports of drills during that year was equal to the whole of the English importation for the same time. In sheetings, of which we exported none in 1876, we sent last year 409,442 pieces, while the English exportations are reached works. tion was rapidly going down, having reached 36,445. And so on through all the ports of

The English consuls urge the fact upon Manchester manufacturers that this decline of their goods in the market is wholly owing to their practice of adulteration, heavy sizing, &c., while the American goods are honestly made. As the English hold upon the importing trade of China depends, at the present time, upon these adulterated cetton goods on one hand, and the poisonous optium drug on the other, it is, and it deserves to be, exceedingly insecure. Nothing more than a steady adherence to an honest policy is needed on the part of Americans to gain control of that important market.

Effects of British Agricultural Depression.—The London Economist enters to a calculation to ascertain the o14, and taxes £11,843,613. The amount of revenue derived directly and indirectly from prevenue of £25,218,303; stamps, £11,305, old, and taxes £11,843,613. The amount of revenue derived directly and indirectly from the consumption of excisable liquors and the drinking customs of the country is remarkably large. The spirit duty, for example, yielded last year no less than £14. 118,677. 9/9, and the malt duty £6,945,023. 1/5. These two items together make an aggregate of over £21,000,000; and if we add to this the receipts from customs duties upon foreign liquors consumed in this country, which in the case of spirits amount to £4,686,806, of wine £1,394,062, and of malt and its products £5294, we get a grand total of over £27,149,862 paid in the shape of duties upon liquors consumed in the country. But this is far from exhausting the amount of revenue obtained indirectly from this source. In the United Kingdom, for example, there are 21,346 brewers who paid £405,021. 15/ in the shape of license duty, and there were 3835 malsters who paid £614,937, of license duty, and in Scotland 11,696 who paid £106,468. This is in addition to the various license duties paid for the sale of beer and wine by wholesale and retail dealers, as also the receipts from grocers licenses. The amount received under these various heads was not less than £1,454,569, farmers will also be called forth; some improvements can be made; the enterprise

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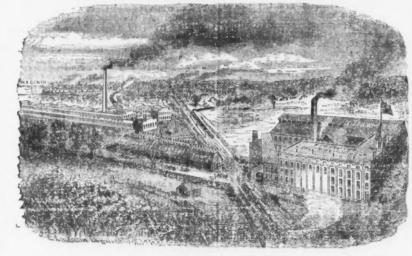
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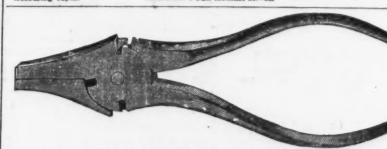
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All extra cutters warranted to interchange.

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The Fair River Railroad, Falling Seventh Railroad, Fall River and New Bedford, enters the city upon a track laid upon piles in Watuppa Pond for about two miles. The breaking up of the ice has se warped and disarranged connection with Australia and the East,

an independent line from there to the McAfee terminus of the Warwick Valley Railroad, and run over the latter road to its Railroad, and run over the latter road to its connection at Greycourt with the New York Lake Erie and Western and Newburg Branch. The plan includes the consolidation, under one management, of the whole route between Greycourt and the Delaware River. Connection at Newburg will be had with the New York and New England Railroad now heims half what the vectors. road, now being built, and at the western end of the route with the Lehigh Valley and other roads, making the line an important one between New England and the coal fields of Pennsylvania. Much of the line is of Pennsylvania. Much of the line is located, and a portion will be put under contract in a few weeks. The road is to be completed next Fall. The company's officers are: Grinnell Burt, president; George R. Blanchard, vice president; Alfred Ely, secretary; D. B. Halsted, treasurer. The other directors are: Thomas C. Platt, William C. Sheldon, John S. Martin, G. A. Hobart, D. F. Merritt, James A. Titman, Frederick A. Potts, B. W. Spencer, and Charles Scranton.

Engine House Door Spring.

The accompanying cut represents a heavy door spring, the special features of which are strength and durability. It is manufactured by J. B. Shannon & Sons, 1009 Market street, Philadelphia, and has been especially devised to fill a want long felt in connection, with the doors of steam fire-engine nection with the doors of steam fire-engine

house only 8, or, at most, 10 seconds have elapsed, it will be seen how necessary great

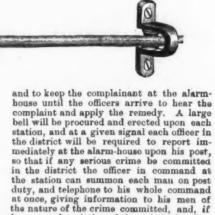
but the best of materials have been used in

Charles Scranton.

Andover, use the Sussex Railroad, or build the rails that it is deemed unsafe to run the cars, and passengers are brought into the city for two miles by hacks.

The Chicago Police Alarm System.

A system of telegraphic alarms has been recently adopted in Chicago for police signaling. Sixty days' trial of the system in the Twelth street district has convinced the city authorities of the advantages of the city authorities of the advantages of the system, and it is now proposed to extend it to the West Lake street district, cover-ing an area of over four square miles. The public alarm houses, as described by the city Chief of Police, are built of wood, and just large enough to admit a man. They are placed upon the sidewalk, as near to street corners as practicable, and secondaly to street corners as practicable, and securely fastened either to telegraph poles or corner stores. The keys to such houses are uniform; stores. The keys to such houses are uniform; they are furnished to respectable citizens upon application at the station, and a record is kept of the names of key holders. A mechanical alarm to register the location of the complaint is inclosed in a small box attached to the side of the house, which box also incloses a telephone for the use of the officer traveling that particular post, and which places the officer in direct communication with his commander at the station. The citizen who possesses a key can. by cation with his commander at the station. The citizen who possesses a key can, by pulling down a lever which protrudes through a slit outside the box, procure the attendance of three policemen and a horse and wagon in from one to four minutes after entering the alarm-house. The wagon carries a stretcher, blankets, shackles, handcuffs, &c., and can be used either as an ambulance or conveyance for prisoners. The alarm-houses are furnished with patent locks, which, after opening, retains the locks, which, after opening, retains the key until an officer arrives with a master key, which he inserts in the reverse side of the lock and releases the original; this precaution is taken to prevent false alarms,



the nature of the crime committed, and, if known, a description of the criminals, thus putting each patrolman on the alert to arrest the suspected parties.

In addition to these public alarm stations are private boxes combining police and fire alarm calls, which are to be placed in stores, offices, and dwellings at a cost of shout \$200 asch. These boxes are a small. about \$30 each. These boxes are so small that they can be set in a wall, behind a desk or under a counter, and a noiseless alarm given, which will not disturb the thief or swindler until the officers arrive to make the arrest. Fire alarms can be given in the same manner, and registered at the headquarters of the Fire Department in one second after the alarm is turned on.

The New Mexican Cable.

DOOR SPRING ADAPTED TO USE IN STEAM Mexico, and, in consequence, the Brazilian Mexico, and, in consequence, the Brazilian Empire, Chili and Peru, are about to be brought into close telegraphic connection with New York. This will be accomplished through the speedy opening of a line established by the Mexican Tolegraph Company, recently organized under the laws of the State of New York, and of which Mr. James A. Scrymser is president, associated with Wm. G. Hamilton and other New York capitalists. They have had constructed a cable, 505 miles in length, to extend from Brazos Santiago, to Tampico, and from thence to Vera Cruz. One of the steamers, bearing a FIRE ENGINE HOUSES .- SCALE, ABOUT 1/4 houses. To any one who has seen the rapid preparations made for getting an engine to the scene of a fire after an alarm has been sounded, it will be plain that the efficiency of the department in some measure depends upon how suddenly the doors can be opened automatically. Systems vary somewhat as between different cities, although in the main they agree. The original alarm moves a lever, which releases the horses and opens the stable doors. The horses rush out, and place themselves alongside the pole of the aprine. At the same instant men are ready houses. To any one who has seen the rapid Vera Cruz. One of the steamers, bearing a section of the cable, the Dacia, has already arrived at Tampico, and her consort, the engine. At the same instant men are ready to hook the traces and attach the breast International, bearing the remainder, will reach there within ten days from the present chains. By this time the driver is on his seat and the engine men in their places. All date. Mr. Scrymser, of whom The Iron Age reporter inquired for further information, is ready for the door to open. The driver reaches above his head, pulls a ring attached to a rope that releases the front doors, which reporter inquired for further information, states that in one week after the cable has reached its destination the line will open for business. The cable weighs five tons to the knot, and was contracted for at \$800,000.

This enterprise was undertaken in anticipation of the vast revival and extension of in turn swing open by the force of some such spring as we show in our engraving. It is

spring as we show in our engraving. It is evident that considerable power is required in a spring for this purpose, for as the doors start to open, the horses rush forward as though it was not possible for anything to be between them and the street. If the doors should fail to swing clear back, there would at once be either an engine or a door requiring considerable repairs. When it is considered that from the time that the alarm is sounded until the engine is out of the house only 8, or, at most, to seconds have pation of the vast revival and extension of commerce, which promises to regenerate the ancient republics of Mexico and Central America, through the efforts of citizens of the United States. The prospective construction of a ship canal at Panama afforded one of the chief incentives. Added to this is the railroad awakening all through the porthers states of Mexico now in course of northern states of Mexico, now in course of development, to be followed by a renewed impetus to mining of every description. Arrangements have been made with the Mexican government under which there is a virtual guaranty that all the foreign business of the Mexican lines shall be concenstrength and efficiency of parts become.
The spring here represented was originally gotten up in answer to a demand made by the Philadelphia Fire Department. There are no novel features about its construction, trated upon the submarine cable for transmission abroad.

The full import of the new cable does

but the best of materials have been used in the best manner. The spring is made of steel wire specially manufactured for the purpose by the Washburn & Moen Manufac-turing Company, %-inch 5%-inch and 3%-inch being used in the different sizes. The spring is made 18 inches, 21 inches and 24 inches not appear until the fact is considered that at present a message for Brazil or ports on the West Coast of South America, must go the West Coast of South America, must go by way of Europe, from Lisbon and the Madeira Islands, to Pernambuco, and thence down the coast to the La Plata and across the Continent upon the other side. The rates are almost prohibitory, whereas by the new route the distance is reduced fron 9600 miles to 3300 miles, and the charges from \$8 per word to \$3. Thus it appears that the Mexican cable will supply the link necessary to connect Mexico and South America with the United States and Europe. More than this, there is a projected route to the long. By its construction these springs are adapted to both swinging a door open and closing it. The engraving shows one ad-justed for closing a door. When applied to justed for closing a door. When applied to an engine-house door, the rod would be on the other side of the small pulley. The Fall River Railroad, running between

A.G.COES

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It having come to the knowledge of JOHN WILSON that Counterfeit Butchers' Knives, purporting to be of his manufacture, are being sold in the United States, he here-by cautions all purchasers of his Knives and Steels to be on the alert against such imposition.

JOHN WILSON also hereby gives Notice, that it is his determination to institute Legal Proceedings against any person or persons who may be detected infringing his Trade Mark. Every article of JOHN WILSON'S manufacture, bears the Trade Mark, in addition to the Name.

WORKS:-SYCAMORE ST., SHEFFIELD, ENGLAND. Established 1750.



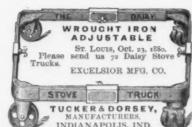


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DOUBLE-ACTING SPRING BUTTS,

SABIN'S LEVER DOOR SPRINGS, For heavy doors,

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BALL'S PAT. SOLID STEEL SHEEP SHEARS. These shears are unsurpassed for cheapness, dure bility and utility. They are made of one solid pice of steel from point to point, and cannot be broken it use either in the bow or at the junction of the shanl and blade. Samples can be seen at above address, o sample lots furnished.



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EWGLISH AND GERMAN GUNS,
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GREAVES' SHEEP SHEARS,
GREAVES' SHEEP SHEARS,
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Etc., Etc., Etc.,
All sorts of Hardware and Merchandiae for inc. Headquarters for

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ROBERT SORBY & SONS SHEFFIELD,

Kangaroo Sheep Shears, The best ORORATEAN



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ndles of German Silver, Nickel Plated. Blades of the Fin-est Steel in the World. Every Razor Fully Warranted. L. C. TOWER, Thermometer Manufr., 39 Exchange St., Rochester, N. Y., Sole Agent. Canvassers wanted. Sample by mail, \$1.

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132 Duane St., New York.



Horse Clipper. Silver Medal, 1878—Paris.



Albion Steel Works, Sheffield, MANUFACTURERS OF

FILES STEEL,

Table Knives, Razors, Shovels, &c., &c., of every description.

CORPORATE MARK



Granted 1749. LAMONT



Coulter, Flagler & Co., Sole New York City Agents.

TELESCOPE TUBES.

Fine Mandrel-drawn Tubes, from Brass or German Silver. Tubes for sliding one within the other made to order. Manufactured by ROBT. T. DEA-KIN & CO., 500 N. 12th St., Philadelphia, makers of the American Improved Brass Garden Syringe

CLOTHES WRINGERS.



T. J. ALEXANDER, Manager, BOSTON, MASS.

20,000 Sold the Second Year. THE BEST ADJUSTABLE BAG HOLDER PRICE ONLY \$1.50.



PRICE ONLY \$1.50.
Sent free, on receipt of the price, anywhere in the United States.
Just the thing for the Farmer, Thresher, Miller, the Feed Store Grain, Potato, Guano and Phosphate dealers. Postmasters and Fublishers, and to all others who use Sacks or Bags it is indispensable. A perfect and simple device, made of iron, and will last a life time. Sold by the Hardware trade everywhere. Orders solicited. The plat form is extra if wanted. Agents wanted everywhere. Address L. JEFF. SPRENGLE. L. JEFF. SPRENGLE, Ashland, Ohio

e can do withou it for \$1.50. Send for a circular Special discount to the trade

FORGED OX SHOES. The only Ox Shoe made with patent concavity to fit hoof. Also Flat Shoes with two calks complete, at same price. Worth double any Malleable Iron Shoe.

Greenfield Tool Co., Greenfield, Mass.

Established in 1839.

A. G. COES & CO.

WORCESTER, MASS.,

Successors to L. & A. G. Coes,

Manufacturers of

THE GENUINE

COES Screw

Wrenches.

PATENTED. May 2, 1871. December #5, 1871. December 28, 1875. August 1, 1876.

The backstrain when the wrench is used is borne by the bar-not by the handle. The strongest Wrench made, and the only successful Re-enforced Bar.

A. G. COES & CO.,

Our Agents, GRAHAM & HAINES, 113 Chambers St., New York, carry a full line of our goods, and will be pleased to serve you at factory prices.

STANDARD GIRARD WRENCH.



NO SUPERIOR. GUARANIEED IN EVERY RESPECT.

IT HAS

Wrought Bar, Head and Screw.

Owing to the in-

oreased demand for these justly Popular Wrenches. we are now manufacturing more than any other establish-

ment in the world. Our Wrench having been imitated by other manufactur ers, we have adopted the above Trade Mark, and will hereafter stamp all our goods.

SEND FOR

TERMS and PRICES. GIRARD WRENCH MFG. CO., Girard, Pa.



"DRAW CUT" BUTCHERS' MACHINES. Choppers, Hand and Power Stuffers,
Lard Presses.
Werranted thoroughly made and the EEST IN USE. MURRAY IRON WORKS, Burlington, Iowa.



351 to 353 Classon Ave., Brooklyn, N. Y. CHAS. E. LITTLE,

89 Fulton St., New York, Pump-Log and Tubing Augers and Fittings, And Agent for

Barnes' Wood-Working Machinery and Lathes. Clements' Steam Band Saw.

Kimball's Poot-Power Band Saw.

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THE WM. ROCERS MFC. CO. Superior Silver-Plated Table Ware.



Post Office Address,

DRAWER 30, HARTFORD, CONN.



NEW YORK OFFICE, NO. 100 CHAMBERS STREET.

HALL, ELTON & CO.,

Electro Plated Ware, German Silver and Britannia Spoons.



Factories, Wallingford Conn.

Salesroom, 75 Chambers Street, New York.

HOLMES, BOOTH & HAYDENS,

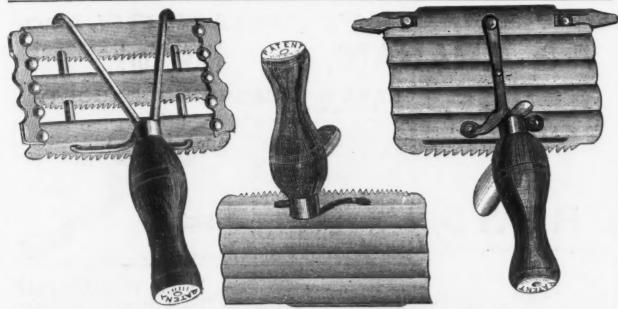
Finest Quality Silver-Plated Spoons, Forks, Knives, &c. Ing at Maysville, Ky., two vertical pumping engines of 3,500,000 gallons combined capacity. This company have a large number of orders, and are running full on extra time.



NOTICE.-We guarantee the base of our Spoons, Forks, &c., to be full 18 per cent. Nickel Silver, and extra heavily plated with pure Silver. Our goods are all hand burnished, and are first-class in every respect. We pack our Spoons and Forks one dozen in each box.

49 CHAMBERS ST., NEW YORK.

Factories, WATERBURY, CONN. 18 FEDERAL ST., BOSTON.



Our arrangement with Messrs. Graham & Haines as agents for our goods having expired, we shall hereafter have no agencies, but shall sell our own goods direct to the trade. We are confident it will be to your advantage to defer buying any Combs until you have inspected and priced our new lines,

"THE PIONEER,"

which we are manufacturing in connection with the "PERFECT," but which are not subject to the conditions governing the prices of the "PERFECT," and are universally acknowledged to be the best low-priced Combs ever offered to the trade. Catalogues with Discounts, &c., sent on application.

AWRENCE CURRY COMB 309 EAST 22d STREET, NEW YORK.

GLOBE HARDWARE CO.. W. Bradley's Edge Tools.

Butchers' Cleavers, Butchers' Choppers, Axes and Hatchets, Grub Hose and Maitocks, Mith Picks, Box Chisels and Scrapers,

MARTIN DOSCHER, Agent, 85 Chambers Street, N. Y.

General Hardware 53 BEEKMAN ST.,

NEW YORK CITY.

passing. In fact, as we learn from another source, the contract calls for a line to Goatzo-coalcos, where the Tehuantepec Railway Company has fixed its western terminus. INDUSTRIAL ITEMS.

Sibley's Scythe Company, at North New-port, intend to manufacture 3500 dozen

The South Boston Iron Works finished a large casting weighing 72 tons, several days ago, for a mining concern in Pennsylvania. ago, for a mining concern in remaining ago, for a mining concern in remaining about 10 tons a day of pig iron at

The American Bolt Company, of Lowell, which have been running as a firm since 1850, have just been incorporated, with James Minter, as president, and Robert H. Butcher, treasurer and agent. It is one of the oldest and most reliable bolt manufacturing concerns in the country, employs upward of 100 hands, and produces about 20,000 bolts of all the different kinds daily, besides nuts, washers, &c. These goods are sold all over the country, and have an enviable repu-tation wherever used. Their factory is built action wherever used. Their factory is built of stone, 175 feet long by 60 feet wide, supplied with all the best machinery and modern conveniences. Both water and steam power are used. Mr. Butcher has charge of the manufacturing department, as well as the financial, and his 18 years' experience, coupled with rare good business judgment and mechanical skill, contributes largely to the success of the company.—Boston Commercial Bulletin.

A portion of the Sigo Iron Works had to shut down a couple of days this week on account of a scarcity of muck iron.

The Pittsburgh Forge and Iron Company are running double turn and are in receipt of a good run of orders.

Alexander Nimick, George P. McBride and John S. Slagle, partners as Nimick and Co., have brought suit in Wheeling against the success of the company.—Boston Commercial Bulletin.

the success of the company.—Boston Com-mercial Bulletin.

Work is being pushed at the Brown ore bed in Cheshire by a small force of men. A shaft has already been sunk about 50 feet,

shaft has already been sunk about 50 feet, and some signs of ore have been discovered. Business at the Douglas Ax Company's Works, at East Douglas, is exceedingly brisk, the numerous pressing orders compelling them to run a portion of the works day and night. On account of the failure of the water supply, they have put in two heavy routable arrangers. heavy portable engines, one at the Lovet mill, and the other at the Howe factory. Besides these, they have a large stationary engine at the Bitt shop, which enables them to carry on a large part of the forging, most of the finishing being done at the two first-

amed places.

The George F. Blake Manufacturing Company, of Boston, have completed a large addition to their factory. They have just shipped one of their improved duplex high-pressure pumping engines, of 2,500,000 gal-lons daily capacity, to furnish water for the city of La Crosse, Wis., and are now erect-ing at Maysville, Ky., two vertical pumping

D. M. Osborne & Co., of Auburn, have contracted for 2,000,000 bricks for additions to their already extensive mower and reaper factory. Their gray-iron foundry is melting over 30 tons of iron per day, to supply a molding floor 107 x 300 feet. New machinery is constantly being added in other depart-

NEW YORK.

ments.

The mill of H. Burden & Son, Troy, shut down last week on account of an accident to the driving wheels, and will probably have to remain idle for two weeks.

John H. Thompson & Co., 32 Pine street, this city, have been appointed agents for the sale of the Conewago Iron Co.'s iron.

The Gregie Furnace at Port Leviden Lewis.

The Gracie Furnace, at Port Leyden, Lewis County, one of the two stacks owned by the Gere Iron and Mining Company, is in blast making 165 tons per week from native hematite and Salisbury ores, of a superior value for car wheels and malleable castings. It is a 42 x 9 stack, built in 1864. Their No. 2 furnace is ready for blowing in, but will remain idle until spring for want of a charcoal supply.

NEW JERSEY.

The creditors of the Adirondack Steel Works in Jersey City, which are owned and operated by Gregory & Co., met a few days ago to ascertain the financial condition of the business, about which injurious rumors have recently been circulated. Benjamin Gregory and Dudley Gregory are the principal partners in the firm. They have not, of late, been able to agree. In consequence, the standing of the company, it is said, be-while the assets aggregate more than twice that amount. The latter consist mainly of real estate. The creditors, after a prolonged discussion, made an arrangement whereby the control of the business will be vested in the control of the business will be vested in Benjamin Gregory until the obligations are discharged. A committee was appointed to examine the accounts and exercise supervision of the business.

The production of Alice has been restrained on account of the scant supply of ore. It is likely that the present year will desion of the business.

PENNSYLVANIA.

and on valve-seat rotary planing machines for the Chesapeake and Ohio and the Maine Central railways. Inquiries for the special tools made at the Flanders Machine Works are very numerous, chiefly from railway re-

touching lines through Central America in In the Bessemer department of the Beth In the Bessemer department of the Beth-lehem Iron Company's works the following tonnage of steel rails was produced during the year 1880: A turn produced 37,400 tons, and B turn, 37,980, a total of 75,380 tons. Both turns lost 12 working days during the year, including holidays and stoppages. A limited steek company is being formed in this city to engage in the manufacture of agricultural implements and machinery. The capital stock is to be not less than \$50,000, subscriptions to which are being

\$50,000, subscriptions to which are being received. The prospects of having the entire amount subscribed in a short time are said to be encouraging.—Reading Eagle.

The total tonnage of anthracite coal mined

and sent from all the regions, as reported by the general carrying companies, for the year ending December 31, 1880, was 23,-638,866 tons, against 26,300,736 tons for the same period last year, a decrease of 2,670,-870 tons. The total amount of bituminous same period last year, a decrease of 2,070,-870 tons. The total amount of bituminous mined for the year was 4,251,452 tons, against 3,732,218 tons for the year 1879, an increase of 609,236 tons. The total tonnage of all kinds of coal for the year 1880 was 27.980,318 tons, against 30,041,952 tons for 1870—showing a decrease last year com-1879-showing a decrease last year, compared with the year preceding, of 2,061,634

PITTSBURGH AND VICINITY.

A portion of the Sligo Iron Works had to

a large number of West Virginia stock-holders of the Mingo Iron Company. The case was recently settled by a commissioner at Steubenville, who decided that the stock-holders who were served in the action were liable to the creditors for an amount equal to the amount of their dividend stock. The stockholders claim that they cannot be held liable

The Pittsburgh Tinware Company (Limited) was established in this city last February, and has been working on orders entirely up to the present time.

VIRGINIA.

The zinc works located at Martin's, Pulaski County, are turning out 4000 pounds of spel-ter per day of excellent quality.

WEST VIRGINIA.

The Riverside Nail Factory has started

The Chambers automatic elevator hatchway doors are so constructed that when the elevator carriage passes up or down they are opened, and when the car-riage passes through they are closed. The construction of the frame of the carriage is diamond-shaped. When the carriage is be-low the doors the upper point of the frame enters at the joint in the center between the doors and raises them; the edge of each door sliding on the inclined planes of the frame are opened to a perpendicular posi-tion. At the moment the center of the frame passes, the doors are drawn toward the center again by an ingeniously con-structed device, and rest upon the two other planes of the frame, closing all the time until the point of the frame passes the point opposite the hinges of the doors, at which time the doors have again closed. One of these elevators with the Chambers improvements is in successful operation at No. 139 Main street, Cincinnati.
The Hughes Cultivator Company, at Ham-

ilton, have done a fair business in the past year, and are expecting a heavy trade this year, and are expecting a heavy trade this year. They manufacture as a specialty the Hughes caster rolling coulter, with patent hub and clamp and the Mead tucker attachment. Over 50,000 of these coulters are said to be in use, giving entire satisfaction. They are used with the Hughes sulky breaking plow, now manufactured by the Long & Allstatter Company at Hamilton, and may be attached to any plow. Besides this they manufacture several valuable specialties in the line of agricultural implements, among the line of agricultural implements, among which is their new spring-toothed harrow and pulverizer.

Every furnace in the county was in blast last year excepting Vesuvius, and present indications point to the same activity the present year, with an increased production. The tons of pig iron made in 1880 are shown

Furnace Lawrence. Pinegrove.

velop better facilities in this direction.
Sarah Furnace made wonderful time in
1880—missing only three days in the entire
year. Several of the charcoal furnaces were
late in starting, and now have sufficient The L. B. Flanders Machine Works are at work on orders for locomotive cylinder boring machines for the Lehigh Valley Rail way Company and the Wisconsin Central, way Central Central, way Central Ironton Register.

INDIANA.

The Atlas Eugine Works, Indianapolis, are running full, employing about 350 men, and are much crowded, especially with orders for their large Corliss and slide The Pottstown Iron Company are about to try the experiment of carrying hot iron from the blast furnace to the puddle mill in a car that will run on a railroad track between the two buildings. At present the iron is run into what are known as bars of pig iron and then carted to the mill, where it is thrown into the furnace when cold and melted in the regular way. At each puddle furnace two additional helpers will be employed, and it is thought that several additional heats can be made daily, thus increasing the way the firm made as the firm and shall represent the iron is run into what are known as bars of pig iron and then carted to the mill, where it is thrown into the furnace when cold and melted in the regular way. At each puddle furnace two additional helpers will be employed, and it is thought that several additional heats can be made daily, thus increasing the quantity of iron made can be day and Minn.

ployed, and it is thought that several additional heats can be made daily, thus increasing the quantity of iron made each day and furnishing employment to more men. The distance between the blast furnace and the puddle mill is upward of 100 yards and the track is a narrow gauge.

The Kittanning Rolling Mill has been put in order, and has started up with orders enough to keep the fires lighted for over two months.

The Thorn Wire Hedge Company will place in their new factory, on Clinton street, an improved double-acting Corliss engine and boiler of 180-horse-power, and 12 more barbing machines with a capacity of 30 tons every 24 hours. The work will be in running order March 1st. ning order March 1st,

H. D. SMITH & CO.,

Plantsville, Conn.,

Manufacturers of the

BEST QUALITY CARRIAGE MAKERS' HARDWARE.

Manufacture the Largest Variety of Forged Carriage Irons of Best Material and Workmanship.

PRICES LOW FOR QUALITY OF WORK FURNISHED.

PRICE LIST.

The Saranac Nails are hammered hot and the finishing and pointing are done cold. Quality is fully guaranteed. For sale by all leading iron and hard ware houses. J. W. LYNDE. Secretary. S. P. BOWEN, President and Treasurer. PLATTSBURG, N. Y.

ELY & WILLIAMS, Gen'l Agents for Eastern and Middle States, 1232 Market St., Philadelphia; 1781 Water St., New York; SARANAC HORSE NAILS, 36 Oliver Street, Boston. S. H. & E. Y MOORE, Gen'l Agents for Western States, 163 and 165 Lake Street, Chicago, Ill. SAM'L G. B. COOK & CO., Agents for Southern States, Nos. 67 and 69 (old Nos. 5 and 7) German Street, Baltimore, Md.

METALLIC CARTRIDGE CUMPAN

Bridgeport, Conn.

WADS

We desire to impress upon the trade the Fact that Black and Pink Edge Gun Wads, now manufactured by us, are Unequaled in Quality, and afford jouders a larger Margin of Profit than the Imported.

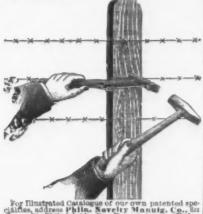
CENTRAL FIRE WATER-PROOF PERCUSSION CAPS. BRASS & PAPER SHOT SHELLS, PRIMERS, &c.

HARTLEY & CRAHAM, Agents:

New York.

THE PATENT SELF-FEEDING STAPLE SET-TER FOR WIRE FENCES.





T. NEW'S

NEW, 39 John St., New York. BARRETT, ARNOLD & KIMBALL, Western Agts., Chicago, Ill.

GEORGE W. BRUCE,

PROPRIETOR OF THE ATLANTIC SCREW WORKS, MANUFACTURER OF

IRON AND BRASS FLAT AND ROUND-HEADED

WOOD

Of all kinds, of Superior Quality and Finish. AGENT FOR

THE FLORENCE TACK CO.'S

TACKS, BRADS AND FINE NAILS,

Of every description, for home and export trade, and

C. A. MAYNARD'S

C. S. HOES, PLANTERS', HILLING, BOG AND FIELD SHOVELS SPADES AND SCOOPS AND BRICK TROWELS,

OF ALL PATTERNS.

Nettlefolds' Screw Eyes, Hooks, &c., and Rivets, Jack Chain, single and double; Thrall's Rules;

> Burden's Horse and Mule Shoes; Ausable, Canton and Vermont Horse Nails.

IMPROVED PADLOCKS for Railway Switches and Freiget Cars, used by many leading roads; also, Mas-ter Keyed Padlocks for Tool Houses, &c. The above made to or-der only, and have flat steel Keys. Our well-known six and seven

D. K. MILLER LOCK COMPANY, Philadelphia, Pa.

LANE'S MEASURING FAUCET.

Price, \$3.00. For Light or Heavy Molasses, Oils, Varnishes or other Fluids.

MANUFACTURED EXCLUSIVELY BY LANE BROS., Millbrook, N. Y.

General Agency, GRAHAM & HAINES, 113 Chambers St., New York. THE



'RAPID TRANSIT' TRAP Has no superior, and is a sure and certain catcher of Mice. With the Metal Platform resting on wood bottom of Trap, an invitation is always extended to Mice of whatever "kind, color or condition of race," into secure and grated quarters, from which they are released by opening cover of Trap and depositing contents into a pail of

The Mice so in at a rapid rate, And each one sets it for his mate.

THE SMITH & EGGE MANUFACTURING CO., Bridgeport, Conn.

Delusion Rat and Mouse Manufactured by



CLAUDIUS JONES & CO., ERIE, Penna.

Bra

This is the only Self-setting Trap on the market, and the most successful,
All orders direct to

CLAUDIUS JONES & CO., ERIE, Penna.

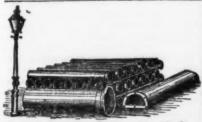


SPENCER & UNDERHILL

94 Chambers St., New York, Agents for American Screw Co.'s Wood Machine and Rail Screws, Stove and Tire Bolts, Rivets, &c. G. F. Warner & Co.'s Carriage Clamps

DEPOT FOR O. Ames & Son's Shovels, Spades and Scoope A. Field & Son's Tacks, Brads, Nails, &c. Nicholson File Co.'s Files and Rasps. W. & S. Butcher's Chisels, Gouges, Plane Irons and Cleavers.

E. W. Gilmore & Co.'s Strap and T Hinges Russell Jennings' Auger and Dowel Bits. Also a general assortment of Hardware.



Philadelphia,

Cast Iron Pipe FOR WATER AND GAS.

Lamp Posts, Valves, &c., Mathew's Pat. Anti-Freezing Hydrants. 400 CHESTNUT STREET.

N. Y. MALLET and HANDLE WORKS

Manufacturers of Calkers', Carpenters', Stone Cutters'
Tin, Copper and Botler Makers'; MALLETS,

Hawsing Beeties, Hawsing and Calking Irons also all kinds of Handles, Siedge, Chisel and Ham mer Handles. Also mer Handies. Also

COTTON AND BALE HOOKS,
Palented Feb. 13, 187; a new combination of Hooks.

456 E. Houston St., New York City.

ES<u>terbrook</u>'s

RELIABLE FOR SALE BY ALL STATIONERS. ESTEROHOOKEC ESTERBROOK STEEL PEN CO.

WAREH ST. O.F.Y. R. Ellingons HANOVER. 30.

J. TIEBOUT

Brass, Galvanized & Ship Chandlery Hardware,

No. 33 Chambers St., New York JAMES COMLY



Vulcanized Rubber Fabrics

MECHANICAL PURPOSES.

RUBBER BELTING and PACKING.

Machine Belting, Steam Packing, Leading Hose, Suction Hose, Grain Elevator

Belting, Steam Hose, Piston-Rod Packing,

Gaskets and Rings.

"TEST", HUSE.



Ball Valves, Car Springs, Wagen Springs, Gas Tubing, Machine Belting, Wringer Bolls, Billiard Cushions. Grain Drill Tubes, Emery Wheels.

Vacuum Pump

This company manufactured the immense DRIVING and ELEVATOR BELTS for the Buckin evators at Chicago, which have been running perfectly for more than Twelve Years, also the mour, Dole & Co., Chicago, and Vanderbilt's great elevators of the New York central and Hud. R. New York, being the Largest Belts in the World! We are now making an Elevator B thes wide and zso feet in length, which will weigh over 18,000 pounds.

LINEN and COTTON HOSE, Pat. July, 1873.

Plain and Rubber Lined.

Circular Woven-Seamless Antiseptic RUBBER LINED "CABLE" HOSE and "TEST" HOSE, Vulcanized Para Rubber and Carbolized Duck, for the use of Steam and Hand Fire Engines, Force Pumps, Mills, Factories, Steamers, Ships, Hospitals, &c.



"CABLE" ANTISEPTIO

Emery Wheels and Packing.



EMERY WHEELS LARGE WHEELS MADE ON CAST-IRON CENTER IF DESIRED.

The properties of these Wheels are such that they can be used with great advantage and economy for cutting, grinding, and finishing Wrought and Cast Iron, Chilled Iron, Hardened Steel, Slate, Marble, Glass, etc. These Wheels are extensively used by manufacturers of Hardware, Cutlery, Edge Tools, Plows, Safes, Stoves, Fire Arms, Wagon Springs, Axles, Skates, Agricultural Implements, and small Machinery of almost every description.



PATENT ELASTIC **Rubber Back Square Packing**

BEST IN THE WORLD. For Packing the Piston Rods & Valve Stems of Steam Engines & Pumps.

B represents that part of the packing which, when in use, is in contact with the Piston rod.

A the clastic back, which keeps the part B against the rod with sufficient pressure to be steam tight, and yet creates but little friction. This Packing is made in lengths of about 29 feet, and of all sizes from ¾ to 2 inches square

Corrugated Rubber Mats and Matting,



For Halls, Flooring, Stone and Iron Stairways, &c. This practical and indispensable article—especially for wear where exposed to ice, snow, or slush—was first introduced by this company soveral years ago, and its real value is in being almost indestructible, when proper materials are used in its manufacture, whilst the cheap, e public by reckless imitators of our patent goods soon becomes brittle diress



NEW YORK BELTING & PACKING CO.,

JOHN H. CHEEVER, Treasurer.

CUT TACKS, SHOE NAILS, WIRE NAILS. Pat. Brads, Finishing Nails, Clout Nails, Trunk Nails, Hungarian Nails,

Cigar-Box Nails, Basket Nails, 2d and 3d Fine Nails. Carpet Tacks, Epholstorers' Tacks, Gimp and Lace Tacks, Brush
Tacks, Copper and Brass Tacks,
BRASS AND IRON ESCUTCHEON PINS, &c., &c.

MANUFACTURED BY DUNBAR, HOBART & WHIDDEN, So. Abington Station, Mass.
New York Salesroom, 39 Warren St. Goods made to order from sample Particular attention given to orders for EXPORT.



HOLROYD & CO., Waterford, N. Y.,

STOCKS AND DIES,

For Blacksmiths, Machinists and Gas Fitters. Send for Circular.



RICHARD DUDGEON. No. 24 Columbia Street, New York,

Maker and Patentee of the Improved Hydraulic Jacks Punches.

Roller Tube Expanders and Direct Acting Steam Hammers. Communications by letter will receive prompt attention, Jacks for pressing on Car Wheels or Crank Pins made to order



Beardsley Scythe Co., GRASS, GRAIN & BUSH SCYTHES, Hay Knives & Corn Knives.

See our advertisement in The Iron Age first issue of each month

rental per month.

mills will probably be running again in about 10 days.—Industrial World.

The Illinois Iron and Bolt Company, the Star Manufacturing Company, the Atlantic Mills and all other manufacturing places at Carpentersville, have been compelled to shut down on account of low water in the Fox River, throwing nearly 400 men out of

MISSOURI.

On the 13th instant the Cheever & Burchard Cutlery Company, of St. Louis, made an assignment to R. Wood Crittenden. The nominal capital is \$100,000; paid in, \$80,000. The cause of the failure is not known, but reports say it is overtrading on a credit casis. The creditors are principally in New York, Connecticut and England. The present corporation is about a year old. Prior to that the name of the firm was Cheever, Burchard & Co.; and still earlier, Warne, Cheever & Co., one of the best-known houses in the West.

The Vulcan Steel Works, of St. Louis, are in full operation. The blast furnaces, however, are all out except Jupiter Furnace, which is in operation.

The Glendale Zinc Furnace, at Carondelet, has been out of blast for several weeks. All the other furnaces are at present in blast.

KENTUCKY.

The Norton Iron Works during 1880 manufactured 223,000 kegs of nails, their fur-

The Mt. Savage Furnace was to have blown out last Sunday, when T. B. Walker's (the late lessee) term expires, to be followed by Joseph S. Woolfolk, lessee. Mr. Woolfolk contemplates a blast of about 10,000 cords of wood.

During the year 1880 the Ashland Furnace, running only on raw coal for fuel, made 13,787 tons of pig iron, running in all 287 days, which is equal to a daily average make of 481/4 tons per 24 hours.

MICHIGAN.

We understand that negotiations for the ale of the Milwaukee mine are going on, a sale of the Milwaukee mine are going on, a refusal having been given parties in Cleveland at \$140,000, which would seem to be a low price for a mine well equipped with at least 100,000 tons of No. 1 ore in sight, and a reasonable certainty that the deposit is nearly inexhaustible. A shaft is being sunk preparatory to opening a pit for working, 400 feet west of the recent discovery known as the Ryan pit. The shaft is now down to as the Ryan pit. The shaft is now down 15 feet in a fine quality of ore, which is particularly gratifying, as it clearly indicates the existence of the vein between it and the Ryan pit. How far west of the new shaft the deposit extends of course remains to be decided by future exploration.—Negaunee (Mich.) Herald.

From April 3 to June 26, and from October 8 to December 31, last year, Deer Lake Furnace, at Ishpeming, made 2297% tons of metal. The furnace was out from June 26 to October 8. Since October 8 she has averaged 153½ tons per week, consuming on an average 105 bushels to the ton. The company is building a new engine and beilgs house.

The Michigan Chemical Company will erect at Elk Rapids extensive works for the manufacture of acetate of lime and woodmanufacture of acetate of lime and wood-alcohol, from the smoke and gases which es cape from the 35 charcoal kilns belonging to the Elk Rapids Iron Company.

The Champion Furnace, Menominee, is being thoroughly repaired and put in good

Work has been resumed at the Cambria Mine.

The Jackson Furnace, at Fayette, made an aggregate of 9741½ gross tons of pig metal in 1880.

The Martal Furnace, at Fayette, made an Aggregate of 9741½ gross tons of pig metal in 1880.

The Martel Furnace, building at St.

Brazilian Trade.—The report of Hon. Thomas Adamson, American Consul Gen-eral at Rio Janeiro, suggests that it would pay our large manufacturers to station an agent at that city, the flourishing capital of the Brazilian Empire, a man conversant with the Portuguese language and the usages of mercantile business, and who would not attempt to import goods until he had carefully studied the peculiarities of the market, the wants of the country, the many peculiar provisions of the tariff and the rulings of customs' officials, as well as the style in which goods should be put up, size of packages, mode of packing, &c. If such a man cannot be found, the next best thing is to find a resident firm possessing these qualifi-cations, and then do business through such a firm and such only. In General Adamwest Winsted, Conn. son's opinion there is a market there for a greater variety of cotton goods and ironware, for plated ware, glassware, planta-

The Manny Manufacturing Company, of Rockford, will, it is expected, assume control of the Elgin Agricultural Works about the 1st of July next. Manny is to pay \$100 rental per month.

The Hercules Iron Works, of Chicago, commence the new year with new contracts amounting to \$33,000.

The Union Iron and Steel Company have been closed down for several days. They are making their general yearly repairs at the mills. Among the important repairs may be mentioned the taking out of the 13-ton bydraulic plunger, used for moving cranes and carting the same across the city to the Hercules Iron Works, on Canal street, where it is to be turned down. The mills will probably be running again in about hitherto Germany has undersold us. He is hopeful of the future of our trade there, but says: "Our people may as well disabuse their minds of the idea that this is a new Japan, just opened to commerce, and that the people of Brazil are particularly anxious to trade with us above all others. There are a great many popular fallacies to be got rid of. Just before the writer of this left home, a speaker at a public meeting in Philadelfhia gravely told his audience that the Brazilians were very anxious to trade with us above all others. hitherto Germany has undersold us. He is oungelied them to take their wool to Europe for sale, and when there they supplied their wants in European markets." To this he replies that Brazil has hardly any wool to sell, her total shipments last year being less than those of many a single county of Ohio.

Tools for the Boys.

The following article, though specially written for Carpentry and Building, contains much that is valuable to mechanics in other besides the building trades, and to parents generally. Wood-working tools are valuable in every household, and a little knowledge of their use often makes a great ving in household expenses

We suppose there is scarcely one carpen-ter in a hundred who has not "cracked the commandment," to say the least, when coming into the shop and finding that one of his boys has been trying to do some kind of rough work with a favorite plane or chisel. Now we don't think that it is fair of the boy to work with his father's best tools, for the old man is pretty certain to have all the labor of putting them in order and the

youngster all the practice in dulling them.

No matter whether the boy intends to be a carpenter or not, see to it that he has tools a carpenter or not, see to it that he has tools to work with. The assortment need not be large, but let them be his own. Let them be of fair quality and teach him how to keep them in first-class order. But, some one says, I have no boys, my children are all girls. Well, it will do no harm for the girls to learn to drive a nail, saw a board off, square and joint the edge, or even go so far as to make a box. Certainly the carpenter's daughter ought to know how to do some of daughter ought to know how to do some of daughter ought to know how to do some of the easier or simpler things which require tools, for she usually needs this knowledge more than the daughters of other men. The old proverb suggests the reason: "The shoemaker's children have to go barefoot, &c." Where girls have this knowledge they are more independent in a great many things, and are able to help thereshes and corre and are able to help themselves and carry out their own ideas, in difficult places where

they are usually helpiess.

The outfit for a boy need not be expensive. A square, a couple of planes, hammer, draw shave and bit stock and a few bits, half a dozen chisels, and, lastly, a bench screw are ample. The boy should have a screw are ample. The boy should have a bench of his own, and either a tool chest or some other place where all his tools may be kept by themselves. Of the "supplies" that he needs most he should have a small stock of his own, so that he be not compelled to "crib" from the old man's boxes. Usually the carpenter's son easily learns how to handle the tools. The important part is to teach him how to take care of them is to teach him how to take care of them. If the parent would have the boy work with his own tools in preference to any others, care should be taken to make the boy keep them in first-class condition all the time There will be then little temptation to use other peoples' tools.

No matter what condition in life the boy nay find himself this knowledge will always be useful, and it will give him a command over circumstances that will be of great assistance in after life, whether in city,

assistance in after life, whether in city, town or country.

Don't put off getting the tools too long. The sooner a child learns to make his own playthings the happier will he be, and the less likely to fall into evil company. A toy shop full of playthings will not give any child half the amusement that he can gain from any little tool by which he is enabled.

The Martel Furnace, building at St. Ignace, Mich., is under the management of Mr. H. E. Burt, and will be well equipped in all respects. The fuel will be charcoal. The stack is 53 feet high, with 10½-foot boshes. Two Whitwell stoves, 15 feet in diameter and 60 feet high, will be used. There will be four boilers, in batteries of two. The blowing engine cylinder is 48 inches stroke and 72 inches diameter. The location is well selected, at the eastern terminus of the Detroit, Mackinaw and Marquette Railroad, on one of the best harbors on the lakes. It is expected that the furnace will be ready to blow in about June 1, 1881. The proprietors are owners of the Erie (Pa.) Car Works, and in the manufacture of wheels and car castings will consume a large part of the output of this furnace, which it is expected will be about 60 or 70 tons per day. It is intended to blow only six days in the week, observing the Sabbath.

How to Find a Flaw in a Forg-lag.—It is well-known that in working iron, such as welling two pieces together, and even in its manufacture, hollow place and even would it be manufacture one would fail to discover. Nor would it be difficult to point out numerous examples of disaster thus occurring. To test the homogeneity of the metal, says the Scientific American, a bar of iron is placed on the equatorial line. A compass with a very sensitive needle of course pointing at a right angle to it. If the bar is perfectly solid through its whole length, the needle will remain steady. If, however, there should be a flaw or hollow place in the bar, the needle will be deflected as it passes from the solid iron; passing on over the hollow place, the needle, will come within the range of the solid iron at the other end of the flaw and will again be deflected. ward the solid iron; passing on over the hollow place, the needle will come within the range of the solid iron at the other end of the flaw, and will again be deflected for-ward. If the bar be cut through anywhere between these two points of deflection, a flaw will invariably be found. Many thou-sands of pieces of iron—some prepared for the purpose of testing this method of trial, others in the ordinary course of business have been operated upon with the same un-varying result.

> Failures in England.-The statistics of failures in England and Wales for the whole period from the first issue of Kemp's Mercan-tile Gazette to the end of 1880, are as follows:

rear.		a count.	
	15,850	1875 9,194	
	15,862	1870 10.845	
869	16,518	1877 11,247	
870	8,151	1878 13,630	
871	8,164	1879 15,732	
872	8,112	1880 12,471	
873	9,064	Scotland, 1880 870	
		Ireland, 1880 325	

The Iron Age

Metallurgical Review.

New York, Thursday, January 20, 1881.

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There is a movement in Germany against the present methods of teaching in the higher technical schools. Manufacturers, and those in charge of great railway and industrial enterprises, complain that the graduates, who are crammed with scientific information, lack any correct appreciation of practical questions. While conceding the importance of studies of a higher order, they protest against the waste of time which too much devotion to them entails. They urge that, although forming a valuable basis for the solution of complex problems, the utility of these studies is overrated, and

all their connection with practical work, or have not during their career had any experience whatever. In the beginning of the development of the present system of technical education, eminent men from the ranks of the profession were chosen to assume the duties of instructors. Now young men of talent are, after graduation, appointed assistants and adjunct professors, and in time take the place of their predecessors, without ever having had any full insight into the actual practical requirements of the professions, for which they are expected to prepare their students. The ambition of this rising generation of scientific gentlemen appears to be for elaborate mathematical treatises, for which the world is no doubt much indebted to them. But they err seriously when they assume it to be their duty to make such works the text THE UNITED STATES, BRITISH AMERICA AND | books for their respective colleges. A training in higher mathematics is undoubtedly of much value to a mechanical or civil engineer, but we do not hesitate to express the opinion that less than five per cent. of the graduates of colleges have ever in after life made direct use of calculus, for instance. In Germany, where the teaching of abstract science has been carried to excess in colleges, a reaction is now setting in. In this country we are far from that danger vet, but still there are indications of a tendency in that direction, which we trust the good common sense and business tact of the trustees of our colleges will check ere it becomes menaeing to their utility.

Liability of Employers for Accidents.

Another case of considerable interest in respect to the liability of employers for inthe Supreme Court of Pennsylvania. It is the case of Bedell against the National Tube Works, and is very similar to the case against the Keystone Bridge Company As in that case, the lower court gave judgment against the company and the Supreme Court reverses the decision. The facts of the case are these: The com-

manager of the company was Mr. Jackson, and Mr. Eardly was a millwright and machinist under daily pay, and had been for some time in the employ of the company. Jackson sent Eardly to take charge of the work in repairing, and, as an inducement to its more speedy completion, was to pay him an extra sum of \$50 therefor. A part of raising the shorter timber. Bedell was a carpenter. He was employed by Eardly and directed by him, but paid by the company. He and one other were stationed at the higher end of the timber, for the purpose of screwing auts on the ends of the bolts when they passed sufficiently through the timber. While the lower end of the timber was being slowly raised, Bedell thought to expedite it by pressing down the upper end. With this view he threw a jack-screw on the end of the timber, rested one hand on the top of the timber, and with the other picked up a block to put on the screw. Just at that moment the hook of the chain broke, the lower end of the timber fell and the upper end flew up, crushing his hand between it and the block on which the cylinder plate rested.

The court, in passing upon the appeal, states that the action was based on a tort. It rests on the alleged negligence of the It rests on the alleged negligence of the company. The burden of proof was on the defendant in error to establish the neglicurvilinear seam. In its full strength, admitting We quote as follows :

There is no evidence that the company had any notice that Eardly was not a careful and compe-tent person to perform the work to which he was assigned, nor do we find any showing that, in fact he was not careful and competent. It therefore follows that the company was not guilty of negli-gence in putting him in charge of the work. The general superintendent did not direct in what nanner nor with what appliances the timber manner nor with what appliances the timber should be raised. The company had other chains and of a larger size than the one us d. Eardly selected one which he thought suitable. He testified that he made an examination of "every link an I ring and hook" of the chain. The body of the chain was about nine sixteenths of an inch. The ok was one and one-eighth inches in diam The witnesses for Bedell testified that the chain was rusty, and that Eardly was told that it was too weak for the purpose. Both of these facts were denied by the witnesses of the plaintiff in No witness swears that any do pressed as to the sufficient strength of the hook but it was to the chain generally. It was the hook only that broke, although it was twice as large as the other part of the chain. The smaller part ed the test and showed no failure of stre The evidence is that the timber weighed less than four tons. About one-third of it rested on the wall, so that only two-thirds of its weight was to e raised by the tackle. The book exhibited no flaw, and in the opinion of experts its tensile strength was such that it ought to have stood a strain of 60,000 pounds, or 30 tons. This is fully ten times the weight of the part of the timber raised by the tackle. Thus, it appears, no one did doubt, nor had any reason to doubt, that the strength of the hook was sufficient for the purpose to which it was applied. Eardly and Bedell were olaborers in the work. They were fellow servants in the same common employment. Although Early was permitted to select some of the men who were to assist in doing the work, yet he, as well as they and all engaged therein, was hired by the day and paid by the company.

The court laid down the law of liability as

A master is not liable to his servant for the neg

on Negligence, page 86.) The master does not warrant the competency of any of his servants to the other. It matters not that they are of unequal grade, if the services of each in his par-ticular labor is directed to the same general ead. And, although the inferior in grade is subject to the control and directions of the superior, whose act caused the injury, the rule is the same. What. Law of Neg., sec. sey; Lehigh Valley Coal Co. vs. Jones, 5 Norris, 432; Priestley vs. Fowler, 3 Mes & W., 6; Wonder vs. B. & O. R. R., 38 Md., 410. If, then, we have shown that Eardly and Bedell were fellow servants, even if the former were negligent on the occasion of this injury, that fact is insuffi-cient to charge the company with negligence in appointing the negligent employee. Whar. on Neg., sec. 240; Feltham vs. England, L. R., 2; Q. B., 33.

These two cases appear to have settled, for the State of Pennsylvania at least, the points laid down in the opinions of the Sureme Court; but the especial point of both decisions is that an employer is not liable for injury done an employee, even though the employee may have been working under the direction of another, unless it is shown that the one under whose direction he was working was a direct representative of the employer, and unless he proceeded under the direct orders of the employer to do the act that caused the injury. Where the one having charge of the work, not being a direct representative of the employer, acts in his wn best judgment, and through an error of judgment some injury follows, the employer is not responsible, unless he knew that the man in charge was unskillful or incompetent.

Boiler Explosions in Iron Works.

In a letter to the Editor of The Iron Age. discussing the recent frequency of boiler explosions in iron works, Mr. J. W. Allen, president of the Hartford Steam Boiler Inspection and Insurance Company, states jury to workmen, has just been decided by that the observations and experiences of his company lead to the conclusion that the cause is largely carelessness. The rush of business has brought many boilers into use which for years have been idle, and they which we have already commented upon. have been put to what would be their full capacity if in perfect condition. This conclusion seems to be warranted in the case of the recent explosion at Allentown, although the Hartford Company have not yet obtained pany had leased a rolling mill which was out enough information on the subject to warof repair. The general superintendent and rant them in expressing any opinion in this particular case. Mr. W. president of the Keystone Council No. 1, of the Stationary Engineers of Philadelphia, has made a report on the Allentown case which, if justified by the facts, makes an

unpleasant showing. He says: In the first place, I find malconstruction. malconstruction was in hanging the boiler at the an extra sum of \$50 therefor. A part of the repairs required was the adjustment of a fly-wheel and the putting of a heavy beam on each wall of the pit in which the wheel was to revolve. The larger timber had been raised and put in place by means of a rope and chain tackle and crane, werked by a windlass. The same machinery was used in the pressure has been carried far in excess for a being even, and the rivets being to small for the holes—the holes \$\frac{1}{2}\$-inch. From the evidence it appears that the pressure has been carried far in excess for a being of this size and thekness, as we estimate boiler of this size and thickness, as we estimate the strength of a belier by its weakest part. I would judge the character of the fron, as it presents itself, able to sustain a tensile strength of 52,000 pounds per square inch, sed reducing this 44 per cent., and taking the thickness of the fron at 5:16, and the diameter of the boiler at 36 inches, the bursting pressure would be 505% pounds. One sixth of the bursting pressure being the safe working pressure (by our city ordnance) the safe working pressure would be 84.2 pounds. This would be the safe pressure for the iron that would be the safe pressure for the iron that gave way, the fourth sheet, while the fifth sheet —being 34 iron—by the same rule it would have a bursting pressure of 605.6 pounds, and a safe working pressure 101.1 pounds. This would be the calculation for a new boiler of firstbe the calculation for a new boiler of first-class workmanship, and hung from three saddles distributing the weight. Now, when we consider the weight of the boiler at 6000 pounds, and a weight of 8000 pounds of water, and of 3000 pounds of brick and mortar laid on top of the boiler, there is not much wonder that it gave way in the cen-ter, particularly when assisted by at least 90 pounds per square inch on the head of the boiler, which would be the mean between 60 and 120. to be equal to 52,000 pounds per square inch, and reducing it 44 per cent. for riveting, its tensile strain would be 1,08,300, and one-sixth of this would be a safe load for it to bear. This is 171,-56 pounds, and substracting the pressure on the eads (91,608) would leave us 79,778 as a surplus to support the weight of the boiler, weight of water and weight of brickwork, which would be ro and weight or breakers, which would be 16,000 pounds. There is not much wonder that the boiler gave way in the center, which, theoretically and practically, is the weakest point when the boiler is hung from the ends and there is no support for the center. The boiler should, undoubtedly, have been condemned before the last patch was put of It was evidently a great deal older than reporte

The subject of supporting boilers in puddling and heating furnaces anl in other positions around iron and steel works, is one which should receive a much more careful and intelligent study from mechanical engineers than they have yet considered it necessary to give it. Comparatively few of them are so suspended as to compensate for this purpose. The Cotton Exchange is forethe unequal strains of expansion and contraction; and in nearly every instance in which they have exploded, subsequent investigation has traced the disaster to causes of weakness which could have been guarded against by well known means. Intelligent men no longer see anything more mysterious in a boiler explosion than in the discbarge of a loaded gun. Public opinion has been alto- in communication with the exchanges of and do not will probably have occasion for gether too lax in holding steam users to their New York and the cutire country, and seek responsibilities, and in accepting as final the a method by which business men may beunsatisfactory verdiets of juries so confused come independent of the monopoly. It was by conflicting testimony that they could shown that no less than four organizations reach no conclusions. If a man whose boiler are in the field, with ample capital, ready facture in the United States, elsewhere exploded was required to take the conse- to enter upon the work of construction. given in this issue, show a gratifying proquences, fewer accidents of this kind would A company is in course of formation, deliberately weighed the chances of gain or are ready to erect telegraphic wires within 16,386 looms and 792,138 spindles. These loss, and took them with fall knowledge of sixty days in opposition to the Western consume annually 2;0,682 bales of cotton they attribute this fact to the circumstance ligence of a fellow servant while engaged in the the desperate game he was playing. It is Union, if the scheme contemplated in and give employment to 23,068 operatives. that many of the professors have either lost same common employment. (Sherman & Redfield quite time we ceased to regard these boiler the resolutions of the Cotton Exchange is

explosions as mysterious happenings from carried out. The New York Land and unexplained causes. Boilers never explode Ocean Telegraph Company, organized a year when they are strong enough to carry the ago, is likewise ready to engage in the unpressure they are subjected to. This is a dertaking. It has secured the right to land platitude, of course, but it answers every a cable anywhere on British territory; its question which arises in connection with capital will be \$6,000,000, and it has partly accidents to steam boilers.

Consolidation of the Telegraph and Ocean Cable Companies.

Quickly following the reported consoli-

dation of the Western Union and American Union Telegraph Companies, respectively interests, together with the Atlantic and Pacific, in which Mr. Gould is supposed to have a controlling voice, comes the announce ment that the three great ocean cable lines, under the Auglo-American, Direct, and French Cables Companies, have likewise combined, apparently expecting to maintain an absolute monopoly of the entire transatlantic telegraph business. As regards the land lines, it is tolerably certain that a plan is under consideration which contemplates a consolidated capital of \$80,000,000, each of the three parties concerned resorting to a watering process for this purpose. By this device, it is said, they expect to launch their inflated stocks on the community at large, and forever after pocket their dividends on a fictitious valuation. The measure as yet remains in embryo, and the thought is suggested that a collapse of the whole scheme may form a part of the regular programme, when the chief actors have "cleaned out the street through stock manipulations. With respect to the ocean cable companies, are the same misgivings regarding the good faith of all concerned. The French company met in Paris on Wednesday, and ratified the agreement previously drawn up by a committee representing the three companies, and on Friday meetings were held in London by the two English companies, the division of gross receipts being arranged as follows from a common pool: Anglo-American Company, 61 per cent. ; Direct Cable Company ; 23 per cent. French Cable Company, 16 per cent.-the several companies to pay pro rata for working expenses, besides contributing a share toward the construction fund, from which to renew worn-out cables at the end of their average life-say every ten years.

The question is widely discussed whether the French company have not, by this act forfeited their charter, which is said to have been granted on the express stipulation that it should remain independent. Baron Cham bourd, who represents the French Company in New York, was directly interrogated on this point, and he is reported as denying that there was a consolidation, though he acknowledged that there was "a working arrangement." In reply to the question whether there is not a provision in the French charter promising independent competition, he said that this was "a delicate question," which he declined to answer. To the same effect was a question put by a representative of The Iron Age to Mr. Ward, representing the Direct Cable Company, but this gentleman would not admit there was a consolidation : and as to the alleged agreement on the part of his company stipulating for an independent existence, he thought that the correct view to take was that any agreement with a former Secretary of State could have no binding force in law. He probably would not deny, nowever, that it was within the rightful powers of this government to order the emoval of any cable from American soil.

From all the facts obtainable, the inference seemed to be justified that, admitting the existence of "a working arrangement, the several companies have not, strictly speaking, combined. Each will maintain in steel rails are, without doubt, the most its separate organization, and each will thorough ever undertaken. He has had eavor to secure all the busin As for any agreement beyond this, it may be merely verbal, supported by no docu mentary proof. As remarked by a gentleman interested, when a possible interference by the government was spoken of: How could the government show that might be an agreement independent of any document.

The news fell upon the Produce. Cotton plosion of a torpedo, and immediately these bodies united in earnest remonstrance. They have done more than this, for they have that adequate capital is within reach for most in the opposition, and for the good reason that its members find the telegraph tolls the heaviest tax that falls on the cotton trade. At the session on Monday, committee were appointed to put themselves

closed a contract for laying two cables of phosphor-bronze, of guaranteed efficiency. There is also the American Rapid Telegraph Company, already established and working under a new process. With sufficient encouragement, any one of these undertakings could be pushed forward and made a formid able competitor with the consolidated comrepresenting the Vanderbilt and Jay Gould panies. Probably the Produce and Maritime exchanges will take no action in the matter.

> Some of the leading iron-making districts of Great Britain have, according to the statistical returns just published, very materially increased their output in 1880, as compared with 1879. The Cleveland district. whose iron trade is now fifty years old, has jumped from 1,781,443 tons in 1879 to 2,510,853 tons in 1880, thus overreaching its best former year (1874) by a little more than 500,000 tons, while the stock has been little affected. The Scotch furnaces have produced 1,049,000 tons, against 932,000 tons in the year preceding it, while stocks have in this case decreased by a trifling amount. Together they make up about one-half of the output of pig iron in Great Britain, and it might therefore be in ferred from that data that a similar expan sion may be credited to the entire trade of the country. While it is true that certain districts, like that of Newcastle and the Tyne, Lincolnshire and Cumberland, have experienced a notable expansion, there are many others which from present indications appear to have remained stationary. or to have even receded. In the aggregate these are important, so that it would not be fair to draw conclusions from the record of the two leading districts in reference to the others. There are special reasons, too, which have led to the remarkable expansion of the production of the Cleveland district. Hitherto an overwhelming proportion of the ig made was smelted from local ores, and the metal was used for the manufacture of bar, angles, plates, &c. During the last year, however, the establishment of a growing steel industry has led to large importations of pure ores for the manufacture of Bessemer pig, of which 550,000 tons were produced, against 300,000 tons in the preceding year. Partially, this is equivalent to a transfer of this industry from other districts to this favored one; it does not, therefore, represent a net gain when the make of the whole country is taken into account. It should not be forgotten, also, when deductions are drawn from the statistics submitted, that the best year, 1879, is compared with the tolerably prosperous period following it, and that while the exports in 1880 bave increased in a greater proportion than the make, there is, comparatively, a falling off in the home demand. On the whole, therefore, the figures should not be viewed with that alarm which they might inspire at first sight.

The February meeting of the American Institute of Mining Engineers, to be held in Philadelphia, promises to be a memorable one in many ways. Dr. C. B. Dudley will read a paper on the relation of the chemical composition of steel rails to their physical properties, in which, if we are not mistaken, he will support the general conclusion announced in his papers at the Lake George meeting by an array of analyses and service records which will at least give the steel rail makers something to think about. Dr. Dudley's investigations into the causes of weakness and the conditions of durability practically unlimited opportunities. the whole Pennsylvania Railroad to furnish him material, and official authority to order any rail out of the track and into his laboratory for chemical and physical examination, he has certainly been able to study his subject with unusual there was any agreement? The burden thoroughness. He also has access to of proof would be upon them. There exceptionally careful and exact track records, and can obtain the complete history of every rail which comes under his notice, including the tonnage which has passed over and other commercial exchanges like the ex- it. He is, therefore, well qualified to discuss the subject, and his views should, and unquestionably will, receive the careful consideration of steel rail makers and railroad taken measures for the construction of in- engineers. This alone would give the meetdependent lines of telegraph, seeing to it ing more than ordinary interest; but it is probable that many other papers of value will be presented. The social features of the meeting will also be more than ordinarily agreeable. We hear aiready the busy hum of preparation, and mysterious hints reach us of surprises in store for the visiting mem-President Tannahan in the chair, it was bers. The local committee will undoubtedly stated that the object of the meeting was to vindicate the traditional reputation of the start a new line." At this meeting a good people of Pniladelphia for hospitality, and those of the members who can attend several different kinds of regret when they hear about it.

Some census statistics of cotton manugress in this industry in the Southern appen, and then only when the steam user backed by men of great wealth, who States. The fifteen Southern States have si ad fo of be 2 th ch po ha an sur gr

4713 looms and 200,974 spindles, and Arkansas the poorest, with only 28 looms and 2015 spindles. South Carolina's number of looms-1776-suggests the independence the cotton-growing states may yet attain in the manufacture of the staple.

The recognized and frequently applauded tendency of modern investigation in natural sciences, has been toward an accumulation of facts, rather than toward any effort to generalize from them. As a reaction against the mania of speculation prevailing in the earlier stages of the development of modern chemistry, geology, &c., the direction taken has produced highly salutary results. The foundations thus laid have been broad and substantial, and the haze of doubt and uncertainty has been swept away in many departments of science, while new fields of research are constantly opening to a large number of intelligent and active workers. No one will be inclined to underrate the value of their labors, and yet it is difficult to escape the feeling that, notably in chemistry, this search for new facts is conducted without the proper discrimination. A mass of data is piled up without order or connection. It would be valuable material in the hands of those skilled in grouping and arranging it in such a manner as to secure a basis for further work. In its present e, however, it is only raw material, while a great deal of credit properly attaches to original investigation, it should be remembered that it is as great a thing to make a fact useful as to find it out.

WASHINGTON NOTES.

Cotton Ties-Mr. Morrell's Views on the Iron Outlook-Congress and Representation-The Duty on Zinc.

(From Our Own Correspondent.)

WASHINGTON, D. C., January 19, 1881. During a recent visit of Daniel J. Morrell. that gentleman, with others interested in maintaining the present duty on hoop iron, had an interview with the Secretary of the Treasury on the recent decision of Judge French on cotton ties. The Secretary of the Treasury has just decided not to reopen this subject with a view to a hearing specifically on the cotton tie question. He declines to put the cotton ties named in the category of all other cotton ties no matter how constructed. He refers to the decision in the courts at New Orleans in the case of the cotton tie with a stud and buckle, and declines to include that in the provisions of the decision affecting hoop iron cut to

ngths. Mr. Morrell, during his visit here, spoke in very satisfactory terms of the condition and outlook of the iron industry. He said that fair remunerative prices prevailed for those who were well established in the business, and those establishments that never had much backing could not long continue in His opinions were that a steady paying rate was better than unnaturally high prices, as high prices always drew other concerns, tempted by large profits,

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into the business and thus injuriously affec-ted the whole trade. Congress, during the past week, has been very busy, but has accomplished very little work. It is a quite noticeable fact that neither Senators nor Representatives, Repub-licans nor Democrats, are much in the mood for work. They pass most of their time during the session sitting in the retiring rooms, smoking and discussing politics. They construct cabinets one day and take them apart the next, and reconstruct them the next with about equal authority for their conclusions. The only positive thing about the whole matter is that Blaine will be the premier of the new administration, and that Frye, in all probability, will succeed him in the Senste. The first is generally satisfactory to Republicans, and the latter is also, except that the tariff men were determined

place Frye in the Speaker's chair. Among the other occupations of members of Congress just now, is mathematics as applied to ratio and representation. The general report of the census of population has now been submitted to Congress, and each member is figuring away to see how the different ratio will affect the interests of his own State and district. The number of Representatives urged by Mr. Cox is 301. some years since, some workmen, about 2 Under this ratio Maine, Massachusetts, New p. m., on August 5, discovered moke arising Hampshire, Vermont, Pennsylvania, Ohio, from a barren upland. The sun was exces-California, Iowa, Michigan, Mississippi, South Carolina, Wisconsin and West Vir-ginia gain one each; Minnesota and Nebraska two each; Kansas three and Texas

and the number of Representatives 293, and under this it will be about 160,000. The increase at the South causes great surprise all "That animal bodies are liable to sponaround, and demonstrates how little the North has known of the development in that section of the country during the past 10 cients. Many cases have been adduced as years. It was generally supposed that there would be a decided decrease as compared cases of individuals who were highly with the North, but the official figures show

Spontaneous Combustion.

Many hundred fires remain unexplained Many nundred ares remain unexplained, even after the most painstaking and exhaustive investigation. "Among all the wonderful phenomena which chemistry presents to us," writes Prof. Weissman, "there are few more remarkable than those of spontaneous combustion of bodies, animate and inanimate which smit flames and are synctrone. combustion of bodies, animate and inanimate, which emit flames, and are sometimes entirely consumed by internal fire." Among the substances subject to spontaneous combustion pulverized charcoal is one of the most remarkable. "A load of charcoal was delivered in an outhouse of a clergyman in Leipsic, and showed no signs of taking fire until the door, by accident, was left open, when the wind blew sprinklings of snow on the charcoal. The rapid absorption of oxygen from the melting snow caused the charcoal from the melting snow caused the charcoal to ignite, and, as the day was windy, the whole range of buildings was burned to ashes." In this connection a frightful and those of our American housekeepers who burn wood as fuel, and who store the ashes in boxes or barrels. The accidental disturbing of such ashes, even after years, will ignite bits of charcoal and unconsumed woody fiber, provided the air is damp or foggy. The phosphuret of potash from decayed wood renders woody matter in ashes foggy highly inflammable, and mysterious cellar fires in the rural districts are, no doubt, in some cases caused by this extraordinary form of spontaneous combustion.

Prof. Weissman himself had the unfor-

tunate experience of being burned out of house and home on a wild winter night some three years since, and he has since diligently collected facts about it.

It appears that he had been having his

ouse painted, and one night the painters,

ground.

In the carriage factory of Messrs. Eaton & Gilbert, Troy, N. Y., a drop of linseed oil fell into an open paper of lampblack, set it on fire and came within an ace of burning down the whole great factory.

In several instances oilcloth in large rolls failed was \$\frac{1}{2}\$ failed was \$\frac{1}{2}\$ failed was \$\frac{1}{2}\$.

has taken fire in damp, muggy weather. An instance of this also occurs in American fire experience. A planter in Virginia sent his servant to Fredericksburg for a roll of oilcloth. It was a warm day and the wagon was open. During the journey home it be-gan to rain, and the roll of oilcloth took fire on the road. Another instance of the kind is supplied by Philadelphia during the war. An order from the War Department in Washington for knapsacks for a regiment was filled by a Philadelphia Contractor. The sacks were all finished and collected, and counted over and left in a pile in the paint shop about 10 o'clock on Saturday night so as to be sent to Washington by cars early on Monday morning. On entering the paint shop before daylight on Monday morn-ing no knapsacks were to be found. In their place was nothing but a heap of smoldering shes

Newly pressed hay frequently ignites, as do also oatmeal and cornmeal in barrels. During the famine in Ireland in 1847-48 a vessel was dispatched from New York with a cargo of cornmeal for the relief of the suf-ferers. In discharging the bags from the

ferers. In discharging the bags from the vessel the last three were found to be on fire. The American Journal of Science gives a remarkable instance of the spontaneous combustion of wood. A Mr. Reigart, two years previous to the occurrence, received a piece of wood, supposed to be cedar, detached from a large piece dug up 39 feet below the surface, near Lancaster. Penn. The the surface, near Lancaster, Penn. The piece weighed a few ounces, and it was broken in two and laid upon a white pine shelf in Mr. Reigart's counting room. About shelf in Mr. Reigart's counting room. About four days before the discovery of the fire he had occasion to wipe the dust from the shelf and from the piece of cedar, with a wet cloth. Three days afterward it was discovered that the piece of wood had ignited, and combustion was proceeding so rapidly that in a few minutes the shelf would have Indiana, Tennessee and Florida will each sively hot at the time. When they went to lose one; New York will lese two. Arkansas, seek the origin of the smoke they found that the remains of an old decayed hemlock log had burst into a blaze, and were burning fiercely

Prof. Weissman relates several well authenticated cases in which bulbous vessels, According to this plan, the Northern by receiving the direct rays of the sun from States gain 11 and lose nine—a net gain of 2, and the Southern gain 8 and lose 2—a net gain of 6. The first representation under the Constitution was on a ratio of 30,000, Merrimac Co., N. H., it is related a shelf was set on fire in a hotel by means of a pear-shaned decenter containing gin. Any other

taneous combustion," says Prof. Weissman, "is a fact which was well-known to the anwith the North, but the official figures show the reverse.

An appeal having been made from a decision sassessing duty at the rate of 35 percent advalorem on certain imported zinc prepared for engraving, under the head of manufacture of zinc, the appellant claiming that it should be classified as zinc in sheets at the duty of 2½ cents per pound, the department affirms the decision on the ground that the merchandise in question consists of grained and polished zinc plates, 30 by 20 inches, which have been prepared by being cast in molds and by having the edges beveled and the surface polished for a certain class of engraving work; that it is not the sheet zinc, which is classified as a manufacture of zinc, the analysing sheet as a strong electrical excitation. A certain gentleman, known to the Professor, on a cold, keen winter night, a certain gentleman, known to the Professor, on a cold, keen winter nights as the commerce as each of 35 percent, and cold, keen winter nights a that the disturbing elements, so far the the dear of specific decision. A certain gentleman, known to the Professor, on a cold, keen winter nights as the cold, keen winter nights as the cold, keen winter nights as the cold, keen winter nights and evaluation of the proposerous as the three should be classified as zinc in sheets at the duty of 2½ cents per pound, the department affirms the decision on the ground that the meritance of the proposerous as the proposer susceptible to strong electrical excitation."

A certain gentleman, known to the Pro-

Professor Hafmester, in the "Berlin Transwhen wet, or hung up in the open air. A case of this kind recently occured at the abattoir in Jersey City. During the recent spell of hot weather one of the workmen threw off his blue linen blouse, smoking with perspiration. It was hung up in the ice house. In a few minutes it burst in a corruscation of sparks, and literally consumed itself.

Fallures for the Year 1880.

The figures of failures for the entire coun try for each year as it is completed, afford the best indication of the condition of comfrom the melting snow caused the charcoal to ignite, and, as the day was windy, the whole range of buildings was burned to ashes." In this connection a frightful and unsuspected source of fire suggests itself to those of our American housekeepers who of preceding years, as the following will

Failures in the United States	No.	Liabilities.
in 1880 Failures in the United States		\$65,752,000
Failures in the United States	6,658	98,140,000
in 1878 Failures in the United States	10,478	834, 383,000
Failures in the United States	8,872	199,669,000
in 1876 Failures in the United States	9,038	191,117,000
in 1875	7.740	and ofto one

The above table indicates that the merantile failures in the United States, during the year 1880, were in number 4735, with liabilities aggregating nearly \$66,000,000. The failures for 1879 were in number 6650, with liabilities of \$98,000,000. The decrease, therefore, for the past year, is 1923 in number, and in liabilities \$27,000,000—thus tum floor of the cellar. They had previously with a bunch of rags removed from their hands with spirits of turpentine the paint with which they were soiled. The ball of rags took fire, the pants and paint pots followed suit, and the house was burned to the ground.

In the carriage factors comparison of 1880 with 1878 is oven more remarkable. In 1878 the failures numbered 10,478, while in 1880 they numbered only 4735, indicating a lessened number of a resolved number of casualties by 5743, equivalent to nearly 60 per cent. But in the amount of liabilities the change for the better is even greater, for in 1878 the indebtedness of those failed was \$234,000,000.

The following table gives, in condensed shape, the geographical distribution of commercial casualties for last year. The comparison of failures to the number reported in business will repeat a close exercision. parison of tallures to the number reported in business will repay a close examination, as perhaps indicating, more clearly than anything else, the localities in which the chances of success are greatest, and the sections in which the condition of trade has most rapidly improved. The gain is the most marked in the Western States, where only one person in every 235 traders failed, as compared with 1 in every 159 in 1879, while in 1878 it was 1 in every 70.

GEOGRAPHICAL DISTRIBUTION AND PERCENTAGE OF FAILURES.

		2.00.00	of season.				
	-paraj-	188o.					
States.	Number in ness.	Number of Fallures.	Pereentage of failures.	Amount of Liabilities.	Average of Liabilities.		
Eastern Middle Southern Western Pacific	85,774 837,069 109,821 275,672 38,494	723 8,472 835 2,172 534	in 128 x in 161 x in 131 r in 235 r in 72	11,519,419	93,066 10,555 9,837		
Total	746,823	4,735	z in 258	65,752,060	\$13,886		
Canada	57,100	907	z in 63	7.988,077	\$8,807		

The foregoing table of percentages offers a better idea than any other of the real decrease in the number of failures, apart from the amount of indebtedness. This will be understood by closely studying the foregoing figures as compared with the following which extend the comparison back for some years. Thus, in 1876, every 65th man succumbed; in 1877, every 73d; in 1878, every 64th; in 1879, every 108th trader, while in 1880; it was only in the source. 1880 it was only I in every 158 who laid down his load. In an army of nearly 750,-

about 2 in these figures, the circular goes on to say : e arising "In the dark days which the trade of the country experienced between 1874 and 1878, the gloomy statistics which, by almost universal consent, it was our painful duty to compile, were regarded as the most unmistable by a regarded by a re takable evidences of an unhealthy condition of the body politic. Now, however, that it is our pleasant task to compile fig-ures of such a highly favorable character, the result should be regarded as a kind of concentrated testimony to the vastly improved condition of the community these failure statistics, be they favorable or unfavorable, may justly be regarded as the concrete result of the efforts yearly made by the vast number engaged in business pursuits, and indicate a healthy or a morbid condition of financial affairs as faithfully as the barometer does the state of the atmosphere. It is, therefore, with more than ordinary gratification that we submit the comparisons which these tables contain.

available as currency, and the consequence is that this sum has become an immense actions," 1875, records a case of the same nature respecting a peasant, whose linen took fire, whether it was laid up in a box, cates an increase by one-third of the whole volume of the circulating medium as it stood at the date of the resumption of specie payments, and the result is already seen in the immense increase in the prices of stocks, and a very considerable advance in the values of staples. The speculative tenden-cies already developed by this increase in money facilities is shown in the remarkable statement that, during the year 1880, amount of stocks sold on the New Y York Stock Exchange was 93,000,000 of shares, or nearly as much as the last two years combined, while in 1875 the shares sold dence of expansion may be noted in the magnitude of the exchanges recorded by the Clearing House in the city of New York for the first week of 1881. Deducting all the transactions arising from stock operations the payments amounted to \$800,000,000 for a single week, showing the largest transactions of any week on record. The three in-dications above mentioned—the increase in money, the growth of stock operations, and the magnitude of exchanges—may be taken as evidences of a general condition which exists to a greater or less extent throughout of southern England might have been the country. What the consequences of an expansion so marked will be, no one can expansion so marked will be, no one can be compared to the Puritan Commonwealth survived.

After praising the workman of Yor foresee. Some, who are prone to descry evil at every turn, fear a sudden collapse even when the sky is clearest, or, collapse even when the sky is clearest, or, as Carlyle says, 'a bolt out of the blus'; while others who are equally well informed, and whose experience entitles them to credence, do not apprehend, so long as times are moderately prosperous, any disaster whatever. It is a fact, however, which may be pregnent with warning the pregnent with warning the content of the collapse of the may be pregnant with warning, that the failures in the last sixty days of the year 1880 have been not only numerous, but unusually important and significant. It is difficult to reconcile some of the recent disasters with the prosperous condition which is supposed to exist, though some of these failures may be accounted for by a departure from legiti-mate business principles, and by undertak-ing to attempt the control of the market for large products. Still, disasters are numerous, which seems almost unaccountable in present prosperous condition of things. In this connection the recent events which have occured in the Southern States call for attention. The casualties in the interior towns in that section have been very numerous and very startling, and jobbers and others who have large interests there are begin-ning to feel an apprehension which is hardly in consonance with the existing state of things elsewhere. The causes of the frein consonance with the existing state or things elsewhere. The causes of the fre-quent failures in this direction are supposed to be overstocking in autumn, the bad weather which has pervaded a large area, and the slow delivery and realization of the cotton crop in consequence. In the West, Northwest, and in the Middle States, failures are not so numerous, but when they do occur, they are very significant in character, and very much calculated to disturb the happy frame of mind which the year under review has created.'

has created."

The agency makes a very strong appeal for a National Bankrupt Law, which we cannot do better than insert as it is given:

"There is one thing, however, which is more calculated to interfere with the prosperity of the trade of the country than any other, and that is the absence of some provision by which debtors and creditors can alike be protected, and which should take the shape of a national insolvent or bankrupt law. 'The race of the diligent,' as it is called, by which one creditor seeks to get the advantage of another, is an element most fatally destructive of the credit of hundreds of traders; while the disposition of debtors themselves to protect their friends to the detriment of outside creditors, is detructive of the confidence essential to the existence of credit. The peculiar experience which, as mercantile agents, we are daily encountering, enables us to discover the gradual shriveling up of credit in hundreds of cases where, with confidence and the prospect of an equitable distribution of assets, disaster might be avoided. The slightest intimation of prospective trouble, down his load. In an army of nearly 750, whether well founded or not, in the condition of any trader, will cause almost every tion of success, provided the requisite laws for the regulation and protection of such a host are forthcoming.

With record to the comparisons contained disaster, the temptation to make preferences to those who will most readily assist him in his time of trial is almost irresistible. laws of the various States differ so seriously. and in certain quarters so much favor attachments and recovery by summary pro-cess, that it is almost difficult to conceive how the business of the country can go for-ward without the intervention of some national remedy, for which the Constitution in its wisdom provides, and which certainly, at the earliest possible moment, should be made available. We repeat that there is othing at the present moment in the shape of law so urgently demanding enactment as a national bankrupt act, if the internal com-merce of the country is to be conserved, and if the prosperity we now enjoy is to con-

British and American Artisans.

parisons which these tables contain, confirming as they do the general conviction
that the country is in a highly prosperous
state; that the disturbing elements, so far

British industrial capacity. He showed himself than by capitalists who promotes the
as they affect trade and commerce, are exhow, and tried to explain why, the English introduction of the intr

which took place through the emigration to America in the first half of the seventeenth century. There is no doubt that the great mass of colonists were natives of middle and southern England, and that, although a considerable contingent was furnished by what were once Danish settlements in what were once Danish settlements in East Anglia and the "Five Bornighs," very few indeed came from Yorkshire and very few indeed came from Yorkshire and Lancashire, the present centers of British industry. Mr. Pattison thinks this Puritan exodus meant a loss of blood and brain to southern England comparable with that experienced by France through Huguenot expatriation after the revocation of the Edict of Nantes. We do not agree with him in assigning such large effects to the or the Elect of Nantes. We do not agree with him in assigning such large effects to the emigration. There were enough Puritans left in England to carry through the great rebellion and establish the Commonwealth. They were always in a decided minority, however, and it is probable that the depletion of the best elements in their ranks, through the prolonged strain of civil war, is mainly chargeable with the collapse of their political system after the death of Cromwell, and the comparative exhaustion of the southern population ever since. It is none the less true and striking that in the American mechanic we see what the artisan of southern England might have been had

After praising the workman of Yorkshire and Lancashire, Mr. Pattison tells him plain-After praising the workman or Yorkshire and Lancashire, Mr. Pattison tells him plainly wherein he, and the American mechanic whom he most resembles, fall short of the French artisan. Of two elements which enter into the production of manufactured articles, namely, artistic design and mechanical ingenuity, the former is still possessed in a pre-eminent degree by the French as compared with the Anglo-Saxon race. We cannot expect to vie with them in this respect, because, says Mr. Pattison, our civilization is still young, and not yet permeated with artistic sensibilities. The subtlety of feeling and delicacy of hand requisite for goods whose value depends on style and fancy, imply a wide diffusion of good taste and hereditary aptitudes, as well as traditional processes, to provide the supply. In a word, says Mr. Pattison, the tasteful designs of the French pre exist in their ful designs of the French pre exist in their gracious manners; their polite usages and their elegant patterns are only different manifestations of the intense life of a sensitheir elegant patterns are only different manifestations of the intense life of a sensi-tive and highly trained race in possession of an old tradition. What is here said of Eng-land is emphatically applicable to the United States. It is doubtless true that a young nation can hardly have fine manners or the daintiness of hand and eye generated by refinement of life.

When we pass from industrial products ntended for ornament, or in which a pleas-ng appearance is, at least, one of the ends in view, to things meant for use, we see at a glance the scope and source of American superiority. In an old country there are not only inherited aptitudes and pervasive tastes, but also a surplus of labor and superabund-ance of time. In America, where a scarcity of ability labor hamerica. but also a surplus or labor and supersancity of skilled labor has, as a rule, prevailed, there is a strong stimulus applied to the originating power; a great premium offered for the invention of labor-saving machines and tools. Mr. Pattison cites from a report of the last Paris exhibition a comparison of sthere exhibits of machinery with the American exhibits of machinery with the American can which is highly favorable to the latter. of the French in particular it was said that, in the manufacture of machine tools, they do not seem to have grasped the leading principles of mechanics with sufficient thoroughness and insight to be capable of originating new forms and combinations. In was very different, we are told, in the American section, where novel arrangements of motion had given rise to new for of framing, and where the designs have all the freshness of being strock from first principles. Mr. Pattison admits, too, that it is not merely in machines by which labor is economized that American intellectual fertility showed itself. This, of course, is demonstrated by our recent achievements in watchmaking, as well as by our earlier inventions of the revolver and the repeating

Now, the English artisan was not always behind the American workman in respect of inventive skill. Time was, Mr. Pattison reminds us, when all the new discoveries in practical science, and improvements in machinery and engineering, were first made in England; whereas now it is from America natural enough that we should lag behin The our English kinsmen in the cohomal eponds, onely when we had, so to speak, no manufactures. But Mr. Pattiern will find, we think that the awakening of American inventive ferthat it was contemporaneous in fact, with the first development of American industries on a large scale.

But what is the specific force that spirot. lates an American mechanic to invest the innumerable things as to which the negresity of saving labor could not be noncessity felt! What is it that quickens his fornings. but does not operate in the case of the Lan-cashire or Yorkshire workman! There were only, it seems 1,000 patents taken out last year in England, against about 12,000 granted in the United States. Mr. Pannson thinks one cause of the discrepancy is the Mr. Mark Pattison, the other day, in an ideress delivered at Saltaire, in Yorkshire, from the fact that the cost of a nation is should not the execution of the cost of a nation is

The Iron Age

Metallurgical Review.

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There is a movement in Germany against the present methods of teaching in the higher technical schools. Manufacturers. and those in charge of great railway and industrial enterprises, complain that the graduates, who are crammed with scientific information, lack any correct appreciation of practical questions. While conceding the importance of studies of a higher order, they protest against the waste of time which too much devotion to them entails. They urge that, although forming a valuable basis for the solution of complex problems, the utility of these studies is overrated, and

all their connection with practical work, or have not during their career had any experience whatever. In the beginning of the development of the present system of technical education, eminent men from the ranks of the profession were chosen to assume the duties of instructors. Now young men of talent are, after graduation, appointed assistants and adjunct professors, and in time take the place of their predecessors, without ever having had any full insight into the actual practical requirements of the professions, for which they are expected to prepare their students. The ambition of this rising generation of scientific gentlemen appears to be for elaborate mathematical treatises, for which the world is no doubt much indebted to them. But they err seriously when they assume it to be their duty to make such works the text books for their respective colleges. A training in higher mathematics is undoubtedly of much value to a mechanical or civil engineer, but we do not hesitate to express the opinion that less than five per cent. of the graduates of colleges have ever in after life made direct use of calculus, for instance. In Germany, where the teaching of abstract science has been carried to excess in colleges, a reaction is now setting in. In this country we are far from that danger yet, but still there are indications of a tendency in that direction, which we trust the good common sense and business tact of the trustees of our colleges will check ere it becomes menaeing to their utility.

Liability of Employers for Accidents.

Another case of considerable interest in respect to the liability of employers for injury to workmen, has just been decided by the Supreme Court of Pennsylvania. It is the case of Bedell against the National Tube Works, and is very similar to the case against the Keystone Bridge Company which we have already commented upon. As in that case, the lower court gave judgment against the company and the Supreme Court reverses the decision.

The facts of the case are these: The com-

pany had leased a rolling mill which was out of repair. The general superintendent and and Mr. Eardly was a millwright and machinist under daily pay, and had been for some time in the employ of the company. work in repairing, and, as an inducement to its more speedy completion, was to pay him an extra sum of \$50 therefor. A part of the repairs required was the adjustment of a chest back and the cutting of the hole in the shell shed the patting of a heavy barn. an extra sum of \$50 therefor. A part of the repairs required was the adjustment of a fly-wheel and the putting of a heavy beam on each wall of the pit in which the wheel was to revolve. The larger timber had been raised and put in place by means of a rope and chain tackle and crane, werked by a windlass. The same machinery was used in raising the shorter timber. Bedell was a carpenter. He was employed by Eardly and directed by him, but paid by the company. He and one other were stationed at the higher end of the timber, for the purpose of screwing auts on the ends of the bolts when they passed sufficiently through the timber. While the lower end of the timber was being slowly raised, Bedell thought to expedite it by pressing down the upper end. With this view he threw a jack-screw on the end of the timber, rested one hand on the top of the timber, and with the other picked up a block to put on the screw. Just at that moment the hook of the chain broke, the lower end of the timber fell and the upper end flew up, crushing his hand between it and the block on which the cylinder plate rested.

The court, in passing upon the appeal, states that the action was based on a tort. It rests on the alleged negligence of the company. The burden of proof was on the defendant in error to establish the negligence. We quote as follows:

There is no evidence that the company had any otice that Eardly was not a careful and compeent person to perform the work to which he was assigned, nor do we find any showing that, in fact, he was not careful and competent. It therefore follows that the company was not guity of negligence in putting him in charge of the work. The general superintendent did not direct in what nanner nor with what appliances the timber should be raised. The company had other chains and of a larger size than the one us d. Eardly selected one which he thought suitable. He testifled that he made an examination of "every link an I ring and hook" of the chain. The body of the an iring and nook of the chain. The body of the chain was about nine-sixteenths of an inch. The hook was one and one-eighth inches in diameter. The witnesses for Bedell testified that the chain was rusty, and that Eardly was tild that it was too weak for the purpose. Both of these facts were denied by the witnesses of the plaintiff in error. No witness swears that any doubt was ex, pressed as to the sufficient strength of the hook but it was to the chain generally. It was the hook only that broke, although it was twice as large as the other part of the chain. The smaller part stood the test and showed no failure of strength. The evidence is that the timber weighed less than four tons. About one-third of it rested on the wall so that only trust birds of its rested on the wall, so that only two-thirds of its weight was to be raised by the tackle. The book exhibited n flaw, and in the opinion of experts its tensile strength was such that it ought to have stood a strain of 60,000 pounds, or 30 tons. This is fully ten times the weight of the part of the timber raised by the tackle. Thus, it appears, no one did doubt, nor had any reason to doubt, that the strength of the hook was sufficient for the purpose o which it was applied. Eardly and Bedell were colaborers in the work. They were fellow servants in the same common employment. Although Eardly was permitted to select some of the men who were to assist in doing the work, yet he, as well as they and all engaged therein, was hired by the day and paid by the company.

The court laid down the law of liability as follows:

A master is rot liable to his servant for the neg.

on Negligence, page 86.) The master does not warrant the competency of any of his servants to the other. It matters not that they are of unequal grade, if the services of each in his particular labor is directed to the same general end.
And, although the inferior in grade is subject to
the control and directions of the superior, whose
act caused the injury, the rule is the same. Whar. Law of Neg., sec. 29; Lehigh Valley Coal Co. vs. Jones. 5 Norris, 422; Priestley vs. Fowler, 3 Mee & W., 6; Wonder vs. B. & O. R. R., 32 Md., 410. If, then, we have shown that Eardly and Bedeil were fellow servants, even if the former were negligent on the occasion of this injury, that fact is insufficient to charge the company with negligence in appointing the negligent employee. What. on Neg., sec. 240; Feitham vs. England, L. R., 2; Q. B., 33.

These two cases appear to have settled, for the State of Pennsylvania at least, the points laid down in the opinions of the Supreme Court; but the especial point of both decisions is that an employer is not liable for injury done an employee, even though the employee may have been working under the direction of another, unless it is shown that the one under whose direction he was working was a direct representative of the employer, and unless he proceeded under the direct orders of the employer to do the act that caused the injury. Where the one having charge of the work, not being a direct of \$80,000,000, each of the three parties conrepresentative of the employer, acts in his cerned resorting to a watering process for own best judgment, and through an error of judgment some injury follows, the employer is not responsible, unless he knew that the man in charge was unskillful or incompetent.

Boiler Explosions in Iron Works,

In a letter to the Editor of The Iron Age, discussing the recent frequency of boiler explosions in iron works, Mr. J. W. Allen, president of the Hartford Steam Boiler Inspection and Insurance Company, states that the observations and experiences of his company lead to the conclusion that the cause is largely carelessness. The rush of business has brought many boilers into use which for years have been idle, and they have been put to what would be their full capacity if in perfect condition. This conclusion seems to be warranted in the case of the recent explosion at Allentown, although the Hartford Company have not yet obtained enough information on the subject to warof repair. The general superintendent and manager of the company was Mr. Jackson, and Mr. Eardly was a millwright and mapresident of the Keystone Council No. 1, of the Stationary Engineers of Philadelphia, has made a report on the Allentown case Jackson sent Eardly to take charge of the which, if justified by the facts, makes an

having the fourth sheet 3-16-inch iron, and the fifth sheet 36-inch iron. The bad work-manship I find in the riveting, the holes not being even, and the rivets being too small for the holes—the holes 36-inch and the rivets 34-inch. From the evidence it appears that the pressure has been carried far in excess for a boiler of this size and thickness, as we estimate the strength of a boiler by its weakest part. I would judge the character of the fron, as it presents itself, able to sustain a tensile strength of 54,000 pounds per square inch, seed reducing this
44 per cent., and taking the thickness of the iron
at 5-16, and the diameter of the boiler at 36 inches, the bursting pressure would be 505% pounds. One sixth of the bursting pressure being the safe working pressure (by our city ordnance) the safe working pressure would be \$4.0 pounds. This would be the safe pressure for the iron that gave way, the fourth sheet, while the fifth sheet gave way, the fourth sheet, while the fifth sheet—being ¾ iron—by the same rule it would have a bursting pressure of 656.6 pounds, and a safe working pressure ret.r pounds. This would be the calculation for a new boiler of first-class workmanship, and hung from three saddles distributing the weight. Now, when we consider the weight of the boiler at 6000 pounds, and a weight of 8000 pounds of water, and of 3000 pounds of brick and mortar laid on top of the boiler, there is not much wonder that it gave way in the cenis not much wonder that it gave way in the cenis not much wonder that it gave way in the center, particularly when assisted by at least 50 pounds per square inch on the head of the boiler, which would be the mean between 60 and 120. This would be equal to a force of 91,608 pounds on the heads tending to pull the boiler apart in its curvilinear seam. In its full strength, admitting it to be equal to 52,000 pounds per square inch, and reducting its tength. and reducing it 44 per cent. for riveting, its tensile strain would be 1,018,320, and one-sixth of this would be a safe load for it to bear. This is 171, would be a sate load for it to bear. This is 171, -36 pounds, and substracting the pressure on the heads (31.668) would loave us 79.778 as a surplus to support the weight of the boiler, weight of water and weight of brickwork, which would be 19.000 pounds. There is not much wonder that the boiler gave way in the center, which, theoretically and practically, is the weakest point when the boile is hung from the ends and there is no support for the center. The boiler should, undoubtedly, have been condemued before the last patch was put on. It was evidently a great deal older than reported.

The subject of supporting boilers in puddling and heating furnaces anl in other positions around iron and steel works, is one which should receive a much more careful and intelligent study from mechanical engineers than they have yet considered it necessary to give it. Comparatively few of them are so suspended as to compensate for the unequal strains of expansion and contraction; and in nearly every instance in which they have exploded, subsequent investigation has traced the disaster to causes of weakness which could have been guarded against by well known means. Intelligent men no longer see anything more mysterious in a boiler explosion than in the discharge of a loaded gun. Public opinion has been altopressure they are subjected to. This is a dertaking. It has secured the right to land question which arises in connection with capital will be \$6,000,000, and it has partly accidents to steam boilers.

Consolidation of the Telegraph and Ocean Cable Companies.

Quickly following the reported consoli-

dation of the Western Union and American Union Telegraph Companies, respectively representing the Vanderbilt and Jay Gould interests, together with the Atlantic and Pacific, in which Mr. Gould is supposed to have a controlling voice, comes the announcement that the three great ocean cable lines, under the Anglo-American, Direct, and French Cables Companies, have likewise combined, apparently expecting to maintain an absolute monopoly of the entire transatlantic telegraph business. As regards the land lines, it is tolerably certain that a plan is under consideration which contemplates a consolidated capital this purpose. By this device, it is said, they expect to launch their inflated stocks on the community at large, and forever after pocket their dividends on a fictitious valuation. The measure as yet remains in embryo, and the thought is suggested that a collapse of the whole scheme may form a part of the regular programme, when the chief actors have "cleaned out the street" through stock manipulations. With respect to the ocean cable companies, there are the same misgivings regarding the good faith of all concerned. The French company met in Paris on Wednesday, and ratified the agreement previously drawn up by a committee representing the three companies, and on Friday meetings were held in London by the two English companies, the division of gross receipts being arranged as follows from a common pool: Anglo-American Company, 61 per cent. ; Direct Cable Company ; 23 per cent. French Cable Company, 16 per cent.—the several companies to pay pro rata for working expenses, besides contributing a share toward the construction fund, from which to renew worn-out cables at the end of their average life-say every ten years.

The question is widely discussed whether the French company have not, by this act, forfeited their charter, which is said to have been granted on the express stipulation that it should remain independent. Baron Chambourd, who represents the French Company in New York, was directly interrogated on this point, and he is reported as denying that there was a consolidation, though he acknowledged that there was "a working arrangement." In reply to the question whether there is not a provision in the French charter promising independent competition, he said that this was "a delicate question," which he declined to answer. To the same effect was a question put by a representative of The Iron Age to Mr. Ward, representing the Direct Cable Company, but this gentleman would not admit there was a consolidation; and as to the alleged agreement on the part of his company stipulating for an independent existence, he thought that the correct view to take was that any agreement with a former Secretary of State could have no binding force in law. He probably would not deny, however, that it was within the rightful powers of this government to order the

removal of any cable from American soil. From all the facts obtainable, the infereuce seemed to be justified that, admitting the existence of "a working arrangement," the several companies have not, strictly speaking, combined. Each will maintain its separate organization, and each will endeavor to secure all the business possible. As for any agreement beyond this, it may be merely verbal, supported by no docu mentary proof. As remarked by a gentleman interested, when a possible interference by the government was spoken of: How could the government show that might be an agreement independent of any document.'

The news fell upon the Produce, Cotton plosion of a torpedo, and immediately these bodies united in earnest remonstrance. They have done more than this, for they have taken measures for the construction of inthis purpose. The Cotton Exchange is foremost in the opposition, and for the good reastart a new line." responsibilities, and in accepting as final the a method by which business men may beunsatisfactory verdicts of juries so confused come independent of the monopoly. It was by conflicting testimony that they could shown that no less than four organizations quences, fewer accidents of this kind would A company is in course of formation, happen, and then only when the steam user backed by men of great wealth, who they attribute this fact to the circumstance that many of the professors have either lost.

A master is rot liable to his servant for the neg. the desperate game he was playing. It is Union, if the acheme contemplated in ligence of a fellow servant while engaged in the the desperate game he was playing. It is Union, if the acheme contemplated in ligence of a fellow servant while engaged in the the desperate game he was playing. It is Union, if the resolutions of the Cotton Exchange is Georgia makes the best showing, having

platitude, of course, but it answers every a cable anywhere on British territory; its closed a contract for laying two cables of phosphor-bronze, of guarantesd efficiency. There is also the American Rapid Telegraph Company, already established and working under a new process. With sufficient encouragement, any one of these undertakings could be pushed forward and made a formidable competitor with the consolidated companies. Probably the Produce and Maritime exchanges will take no action in the

> Some of the leading iron-making districts of Great Britain have, according to the statistical returns just published, very materially increased their output in 1880, as compared with 1879. The Cleveland district, whose iron trade is now fifty years old, has jumped from 1,781,443 tons in 1879 to 2,510,853 tons in 1880, thus overreaching its best former year (1874) by a little more than 500,000 tons, while the stock has been little affected. The Scotch furnaces have produced 1,049,000 tons, against 932,000 tons in the year preceding it, while stocks have in this case decreased by a trifling amount. Together they make up about one-half of the output of pig iron in Great Britain, and it might therefore be inferred from that data that a similar expan sion may be credited to the entire trade of the country. While it is true that certain districts, like that of Newcastle and the Tyne, Lincolnshire and Cumberland, have experienced a notable expansion, there are many others which from present indications appear to have remained stationary, or to have even receded. In the aggregate these are important, so that it would not be fair to draw conclusions from the record of the two leading districts in reference to the others. There are special reasons, too, which have led to the remarkable expansion of the production of the Cleveland district. Hitherto an overwhelming proportion of the pig made was smelted from local ores, and the metal was used for the manufacture of bar, angles, plates, &c. During the last year, however, the establishment of a growing steel industry has led to large importations of pure ores for the manufacture of Bessemer pig, of which 550,000 tons were produced, against 300,000 tons in the preceding year. Partially, this is equivalent to a transfer of this industry from other districts to this favored one; it does not, therefore, represent a net gain when the make of the whole country is taken into account. It should not be forgotten, also, when deductions are drawn from the statistics submitted, that the best year, 1879, is compared with the tolerably prosperous period following it, and that while the exports in 1880 have increased in a greater proportion than the make, there is, comparatively, a falling off in the home demand. On the whole, therefore, the figures should not be viewed with that alarm which they might inspire at first sight. The February meeting of the American

Institute of Mining Engineers, to be held in Philadelphia, promises to be a memorable one in many ways. Dr. C. B. Dudley will read a paper on the relation of the chemical composition of steel rails to their physical properties, in which, if we are not mistaken, he will support the general conclusion announced in his papers at the Lake George meeting by an array of analyses and service records which will at least give the steel rail makers something to think about. Dr. Dudley's investigations into the causes of weakness and the conditions of durability in steel rails are, without doubt, the most thorough ever undertaken. practically unlimited opportunities the whole Pensylvania Railroad to furnish him material, and official authority to order any rail out of the track and into his laboratory for chemical and physical examination, he has certainly been able to study his subject with unusual there was any agreement? The burden thoroughness. He also has access to of proof would be upon them. There exceptionally careful and exact track records, and can obtain the complete history of every rail which comes under his notice, including the tonnage which has passed over and other commercial exchanges like the ex- it. He is, therefore, well qualified to discuss the subject, and his views should, and unquestionably will, receive the careful consideration of steel rail makers and railroad engineers. This alone would give the meetdependent lines of telegraph, seeing to it ing more than ordinary interest; but it is that adequate capital is within reach for probable that many other papers of value will be presented. The social features of the meeting will also be more than ordinarily son that its members find the telegraph tolls the heaviest tax that falls on the cotton trade. At the session on Monday, us of surprises in store for the visiting mem-President Tannahan in the chair, it was bers. The local committee will undoubtedly stated that the object of the meeting was to vindicate the traditional reputation of the At this meeting a good people of Philadelphia for hospitality, ommittee were appointed to put themselves and those of the members who can attend in communication with the exchanges of and do not will probably have occasion for gether too lax in holding steam users to their New York and the entire country, and seek several different kinds of regret when they hear about it.

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Some census statistics of cotton manureach no conclusions. If a man whose boiler are in the field, with ample capital, ready facture in the United States, elsewhere emploded was required to take the conse- to enter upon the work of construction. given in this issue, show a gratifying progress in this industry in the Southern States. The fifteen Southern States have deliberately weighed the chances of gain or are ready to erect telegraphic wires within 16,386 looms and 792,138 spindles. These loss, and took them with full knowledge of sixty days in opposition to the Western consume annually 2;0,682 bales of cotton

4713 looms and 200,974 spindles, and Arkansas the poorest, with only 28 looms and 2015 spindles. South Carolina's number of looms-1776-suggests the independence the cotton-growing states may yet attain in the manufacture of the staple.

The recognized and frequently applauded tendency of modern investigation in natural sciences, has been toward an accumulation of facts, rather than toward any effort to generalize from them. As a reaction against the mania of speculation prevailing in the earlier stages of the development of modern chemistry, geology, &c., the direction taken has produced highly salutary results. The foundations thus laid have been broad and substantial, and the haze of doubt and uncertainty has been swept away in many departments of science, while new fields of research are constantly opening to a large number of intelligent and active workers. No one will be inclined to underrate the value of their labors, and yet it is difficult to escape the feeling that, notably in chemistry, this search for new facts is conducted without the proper discrimination. A mass of data is piled up without order or connection. It would be valuable material in the hands of those skilled in grouping and arranging it in such a manner as to secure a basis for further work. In its present shape, however, it is only raw material, and while a great deal of credit properly attaches to original investigation, it should be remembered that it is as great a thing to make a fact useful as to find it out.

WASHINGTON NOTES.

Cotton Ties-Mr. Morrell's Views on the Iron Outlook-Congress and Representation-The Duty on Zinc.

(From Our Own Correspondent.)

WASHINGTON, D. C., January 19, 1881. During a recent visit of Daniel J. Morrell, that gentleman, with others interested in maintaining the present duty on hoop iron, had an interview with the Secretary of the had an interview with the Secretary of the Treasury on the recent decision of Judge French on cotton ties. The Secretary of the Treasury has just decided not to reopen this subject with a view to a hearing specifically on the cotton tie question. He declines to put the cotton ties named in the retrigory of all other cotton ties named in the category of all other cotton ties no matter how constructed. He refers to the decision in the courts at New Orleans in the case of the cotton tie with a stud and buckle, and declines to include that in the provisions of the decision affecting hoop iron cut to

Mr. Morrell, during his visit here, spoke in very satisfactory terms of the condition and outlook of the iron industry. He said that fair remunerative prices prevailed for those who were well established in the busi-ness, and those establishments that never had much backing could not long continue in business. His opinions were that a steady paying rate was better than unnaturally high prices, as high prices always drew other concerns, tempted by large profits,

into the business and thus injuriously affected the whole trade.

Congress, during the past week, has been very busy, but has accomplished very little work. It is a quite noticeable fact that neither Senators nor Representatives, Republicans nor Democrats, are much in the mood for work. They pass most of their time during the session sitting in the retiring rooms, smoking and discussing politics. They construct cabinets one day and take them apart the next, and reconstruct them the next with about equal authority for their conclusions. The only positive thing about the whole matter is that Blaine will be the premier of the new administration, and that Frye, in all probability, will succeed him in the Senate. The first is generally satisfactory to Republicans, and the latter is also, except that the tariff men were determined to place Frye in the Speaker's chair.

Among the other occupations of members

of Congress just now, is mathematics as applied to ratio and representation. The general report of the census of population has now been submitted to Congress, and each member is figuring away to see how the different ratio will affect the interests of his own State and district. The number of Representatives urged by Mr. Cox is 301. Under this ratio Maine, Massachusetts, New Hampshire, Vermont, Pennsylvania, Ohio, Indiana, Tennessee and Florida will each Indiana, Tennessee and Florida will each lose one; New York will lese two. Arkansas, California, Iowa, Michigan, Mississippi, South Carolina, Wisconsin and West Virginia gain one each; Minnesota and Nebraska two each; Kansas three and Texas

According to this plan, the Northern States gain 11 and lose nine—a net gain of 2, and the Southern gain 8 and lose 2—a net gain of 6. The first representation under the Constitution was on a ratio of 30,000, and the total whole number 65 members. Under the last census the ratio was 131,425, and the number of Rapresentatives 293, and under this it will be about 160,000. The increase at the South causes great surprise all around, and demonstrates how little the North has known of the development in that section of the country during the past to years. It was generally supposed that there would be a decided decrease as compared with the North, but the official figures show

have been prepared by being cast in molds and by having the edges beveled and the surface polished for a certain class of engraving work; that it is not the sheet zinc to the late Archbishop of Toledo, Spain, emitted inflammable perspiration of such a na-

Spontaneous Combustion.

Many hundred fires remain unexplained, even after the most painstaking and exhaus-tive investigation. "Among all the wonder-ful phenomena which chemistry presents to us," writes Prof. Weissman, "there are few more remarkable than those of spontaneous combustion of bodies, animate and inani-mate, which emit flames, and are sometimes entirely consumed by internal fire." Among the substances subject to spontaneous com-bustion pulverized charcoal is one of the most remarkable. "A load of charcoal was delivered in an outhouse of a clergyman in Leipsic, and showed no signs of taking fire Leipsic, and showed no signs of taking fire until the door, by accident, was left open, when the wind blew sprinklings of snow on the charcoal. The rapid absorption of oxygen from the melting snow caused the charcoal to ignite, and, as the day was windy, the whole range of buildings was burned to ashes." In this connection a frightful and unsuspected source of fire suggests; itself to. unsuspected source of fire suggests itself to those of our American housekeepers who burn wood as fuel, and who store the ashes in boxes or barrels. The accidental disturbing of such ashes, even after years, will ignite bits of charcoal and unconsumed woody fiber, provided the air is damp or oggy. The phosphuret of potash from foggy. The phosphuret of potash from decayed wood renders woody matter in ashes highly inflammable, and mysterious cellar fires in the rural districts are, no doubt, in some cases caused by this extraordinary form of spontaneous combustion. Prof. Weissman himself had the unfor-

tror. Weissman himself had the unfor-tunate experience of being burned out of house and home on a wild winter night some three years since, and he has since diligently collected facts about it.

It appears that he had been having his house painted, and one night the painters, as their manner is, left their working pants, their pots and their brushes on the asphal-tum floor of the cellar. They had previously with a bunch of rags removed from their hands with spirits of turpentine the paint

& Gilbert, Troy, N. Y., a drop of linseed oil fell into an open paper of lampblack, set it on fire and came within an acc of burning

down the whole great factory.

In several instances oilcloth in large rolls has taken fire in damp, muggy weather.
An instance of this also occurs in American fire experience. A planter in Virginia sent his servant to Fredericksburg for a roll of oilcloth. It was a warm day and the wagon was open. During the journey home it began to rain, and the roll of oilcloth took fire on the road. Another instance of the kind is supplied by Philadelphia during the war. An order from the War Department in Washington for knapsacks for a regiment was filled by a Philadelphia Contractor. was filled by a Philadelphia Contractor. The sacks were all finished and collected, and counted over and left in a pile in the paint shop about 10 o'clock on Saturday night so as to be sent to Washington by cars early on Monday morning. On entering the paint shop before daylight on Monday morning no knapsacks were to be found. In their place was nothing but a heap of smoldering ashes!

Newly pressed hay frequently ignites, as do also catmeal and cornmeal in barrels. During the famine in Ireland in 1847-48 a vessel was dispatched from New York with a cargo of cornmeal for the relief of the sufferers. In discharging the bags from the vessel the last three were found to be on fire.

The American Journal of Science gives a remarkable instance of the spontaneous com-bustion of wood. A Mr. Reigart, two years bustion of wood. A Mr. Reigart, two years previous to the occurrence, received a piece of wood, supposed to be cedar, detached from a large piece dug up 39 feet below the surface, near Lancaster, Penn. The piece weighed a few ounces, and it was broken in two and laid upon a white pine shelf in Mr. Reigart's counting room. About four day before the discovery of the fire he shelf in Mr. Reigart's counting room. About four days before the discovery of the fire he had occasion to wipe the dust from the shelf and crassion to wipe the dust from the shelf and from the piece of cedar, with a wet cloth. Three days afterward it was discovered that the piece of wood had ignited, and combustion was proceeding so rapidly that in a few minutes the shelf would have been on fire. Probably another prolific source of our forest fires is to be sought in the liability of decayed wood, not only to spontaneous combustion, but from the direct rays of the sun. At Winchester, Conn., some years since, some workmen, about 2 in these figures as compared with the following, which extend the comparison back for some years as compared with the following, which extend the comparison back for some years. Thus, in 1876, every 65th man succumbed; in 1877, every 73d; in 1878, every 65th; in 1879, every 108th trader, while in 1880 it was only 1 in every 158 who laid down his load. In an army of nearly 750, oo, an imprevement so marked ought certainly to beget most hopeful confidence in its future chance of success, provided the requisite laws for the regulation and protection of such a host are forthcoming.

With regard to the comparison back for some which extend the comparison back for some years. Thus, in 1876, every 65th man succumbed; in 1877, every 73d; in 1878, every 65th man succumbed; in 1877, every 73d; in 1878, every 65th man succumbed; in 1877, every 73d; in 1878, every 65th man succumbed; in 1876, every 65th man succumbed some years since, some workmen, about 2 p. m., on August 5, discovered smoke arising from a barren upland. The sun was excessively hot at the time. When they went to seek the origin of the smoke they found that the remains of an old decayed hemlock log had burst into a blaze, and were burning

flercely.

Prof. Weissman relates several well authenticated cases in which hulbous vessels hyacinth glasses, wine decanters on shelves, by receiving the direct rays of the sun from an open window, have caused serious con-flagrations. In the township of Boscaven, Merrimac Co., N. H., it is related a shelf was set on fire in a hotel by means of a pearshaped decanter containing gin. Any other liquid would be, of course, equally dangerous if exposed to the sun.

"That animal bodies are liable to spontaneous combustion," says Prof. Weissman, is a fact which was well-known to the an-Many cases have been adduced as examples, which were no doubt merely cases of individuals who were highly susceptible to strong electrical excitation." An appeal having been made from a decision assessing duty at the rate of 35 per cents ad valorem on certain imported zinc prepared for engraving, under the head of manufacture of zinc, the appellant claiming that it should pound, the department affirms on the ground that the meruestion consists of grained and plates, 30 by 20 inches, which more wonderful and awful in the assur-

Professor Hafmester, in the "Berlin Trans- available as currency, and the consequence actions," 1875, records a case of the same nature respecting a peasant, whose linen took fire, whether it was laid up in a box, when wet, or hung up in the open air. A case of this kind recently occured at the corruscation of sparks, and literally conumed itself,

Fallures for the Year 1880.

The figures of failures for the entire coun try for each year as it is completed, afford the best indication of the condition of commerce that is furnished. The following com-pilation is made by the Mercantile Agency of Messrs. Dun, Wiman & Co. The figure for the year 1880 are exceedingly satisfactory, especially in comparison with those of preceding years, as the following will

in 1879.
Failures in the United States in 1879.
Failures in the United States in 1878.
Failures in the United States in 1877....
Failures in the United States 6,648 10,478 234,383,000

The above table indicates that the mer-cantile failures in the United States, during cantus failures in the United States, during the year 1880, were in number 4735, with liabilities aggregating nearly \$66,000,000. The failures for 1879 were in number 6650, with liabilities of \$98,000,000. The decrease, therefore, for the past year, is 1923 in number, and in liabilities \$27,000,000—thus showing an improvement equal to 40 per cent in number, and a saving in leases by cent. in number, and a saving in losses by bad debts in the same proportion. While the comparison of the last year with the with which they were soiled. The ball of previous one is so extremely favorable, the rags took fire, the pants and paint pots followed suit, and the house was burned to the ground.

In the carriage factory of Messrs. Eaton 4735, indicating a lessened number of Citherat Theorem 18 of the last year with the previous one is so extremely favorable, the comparison of 1880 with 1878 is even more 19,478, while in 1880 they numbered only 4735, indicating a lessened number of casualties by 5743, equivalent to nearly 60 per cent. But in the amount of liabilities the change for the better is even greater, for in 1878 the indebtedness of those who failed was \$234,000,000.

The following table gives, in condensed shape, the geographical distribution of commercial casualties for last year. The com-parison of failures to the number reported in business will repay a close examination, only one person in every 235 traders failed, as compared with I in every 159 in 1879, while in 1878 it was I in every 70.

GEOGRAPHICAL DISTRIBUTION AND PERCENTAGE OF

		FAIL	URES.		
	-pmq			88o.	
States.	Number in ness.	Number of Fallures.	Percentage of failures.	Amount of Liabilities.	Average of Liabilities.
Eastern Middle Southern Western Pacific	85,774 237,069 109,821 275,672 38,494	723 1,472 835 1,771 534	z in 16z z in 131 z in 235 z in 72	8,813,442 11,510,419 5,005,730	9.374
Total	746,823	4,735	-	65,753,000	
CHARLEGE	57,100	6007		7.088.047	3830 No.4

The foregoing table of percentages offers a better idea than any other of the real decrease in the number of failures, apart from the amount of indebtedness. This will be understood by closely studying the foregoing figures as compared with the following

in these figures, the circular goes on to say :
"In the dark days which the trade of the In the dark days which the trade of the country experienced between 1874 and 1878, the gloomy statistics which, by almost universal consent, it was our painful duty to compile, were regarded as the most unmistakable evidences of an unhealthy condition of the body politic. Now, however, that it is our pleasant task to compile figures of such a highly favorable character, the result should be recarded as a kind of the result should be regarded as a kind of concentrated testimony to the vastly improved condition of the community. For these failure statistics, be they favorable or unfavorable, may justly be regarded as the concrete result of the efforts yearly made by the vast number energed in business purthe vast number engaged in business pur-suits, and indicate a healthy or a morbid condition of financial affairs as faithfully as the barometer does the state of the atmosphere. It is, therefore, with more than ordinary gratification that we submit the com-parisons which these tables contain, confirming as they do the general conviction that the country is in a highly prosperous susceptible to strong electrical excitation." state; that the disturbing elements, so far A certain gentleman, known to the Professor, on a cold, keen winter night, recedingly few, and that the prospect for the

is that this sum has become an immense power toward inflation. This amount indicates an increase by one-third of the whole volume of the circulating medium as it stood at the date of the resumption of specie the payments amounted to \$800,000,000 for a single week, showing the largest transactions of any week on record. The three indications above mentioned—the increase in money, the growth of stock operations, and the magnitude of exchanges—may be taken as evidences of a general condition which exists to a greater or less extent throughout the country. What the consequences of an expansion so marked will be, no one can foresee. Some, who are prone to descry evil at every turn, fear a sudden collapse even when the sky is clearest, or, as Carlyle says, 'a bolt out of the blue'; while others who are equally well informed, and whose experience entitles them to credence, do not apprehend, so long as times are moderately prosperous, any disaster whatever. It is a fact, however, which may be pregnant with warning, that the failures in the last sixty days of the year 1880 have been not only numerous, but unusually important and significant. It is difficult to reconcile some of the recent disasters with the prosperous condition which is supposed to exist, though some of these failures may be accounted for by a departure from legiti mate business principles, and by undertak-ing to attempt the control of the market for large products. Still, disasters are numerous, which seems almost unaccountable in present prosperous condition of things. In this connection the recent events which have occured in the Southern States call for attention. The casualties in the interior attention. The casualties in the interior towns in that section have been very numer-ous and very startling, and jobbers and others who have large interests there are beginwho have large interests there are beginning to feel an apprehension which is hardly in consonance with the existing state of things elsewhere. The causes of the frequent failures in this direction are supposed to be overstocking in autumn, the bad weather which has pervaded a large area, and the slow delivery and realization of the cotton crop in consequence. In the West, Northwest, and in the Middle States, failures are not so numerous, but when they do occur they are very significant in character, and very much calculated to disturb the happy frame of mind which the year under review

has created."

The agency makes a very strong appeal for a National Bankrupt Law, which we cannot do better than insert as it is given:

"There is one thing, however, which is more calculated to interfere with the prosperity of the trade of the country than any

other, and that is the absence of some provision by which debtors and creditors ca alike be protected, and which should take the shape of a national insolvent or bank-rupt law. 'The race of the diligent,' as it rupt law. is called, by which one creditor seeks to get the advantage of another, is an element almost fatally destructive of the credit of hundreds of traders; while the disposition of debtors themselves to protect their friends to the detriment of outside creditors, is destructive of the confidence essential to the existence of credit. The peculiar experience which, as mercantile agents, we are daily encountering, enables us to discover daily encountering, enables us to discover the gradual shriveling up of credit in hun-dreds of cases where, with confidence and the prospect of an equitable distribution of assets, disaster might be avoided. The slightest intimation of prospective trouble, whether well founded or not, in the condi-tion of any trader, will cause almost every creditor to pounce down upon him with all the terrors of the law, in the hope that one may get advantage over another; while to disaster, the temptation to make preferences to those who will most readily assist him in his time of trial is almost irresistible. The laws of the various States differ so seriously and in certain quarters so much favor attachments and recovery by summary pro-cess, that it is almost difficult to conceive how the business of the country can go for-ward without the intervention of some national remedy, for which the Constitution in its wisdom provides, and which certainly at the earliest possible moment, should be made available. We repeat that there is nothing at the present moment in the shape of law so urgently demanding enactment as a national bankrupt act, if the internal commerce of the country is to be conserved, and if the prosperity we now enjoy is to continue.

British and American Artisans.

Mr. Mark Pattison, the other day, in an address delivered at Saltaire, in Yorkshire, pointed out the essential deficiencies of British industrial capacity. He showed how, and tried to explain why, the English skilled workman is inferior, on the one hand, to the American, and on the other to

At the outset of this address the speaker called attention to the energy and ingenuity or zinc, the appellant claiming that it should be classified as zinc in sheets at the duty of zix cents per pound, the department affirms the decision on the ground that the merchandise in question consists of grained and country which constitute to its thinking the accumulated with these should be looked for as almost certain interesting to us from the explanation sugression consists of grained and country which constitute to its thinking the accumulated with these should be looked for as almost certain interesting to us from the explanation sugression consists of grained and country which constitutes to its thinking the accumulated with these should be looked for as almost certain interesting to us from the explanation sugression consists of grained and country which constitutes to its thinking the accumulated with these should be looked for as almost certain interesting to us from the explanation sugression consists of grained and country which constitutes to its thinking the accumulated with the south of England. This fact is chiefly lated wisdom of past generations; a country where nothing new can be made popular to a find the country which constitutes to its thinking the accumulated with the south of England. This fact is chiefly lated wisdom of past generations; a country where nothing new can be made country. to arise. The agency enumerates these as follows:

"The rapidity of expansion, which is noticeable at present, is almost certain to result in speculations of a disastrous character.

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"The rapidity of expansion, which is noticeable at present in the countries of the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly, when British capital invested in interesting to the object to be gained. For merly when British capital invested in interesting to the object to be gained. For merly when British capital invested in interesting t graving work; that it is not the sheet zinc which is known to commerce assuch, but an entirely different article, which at that port is classified as a manufacture of zine at duty of 35 per cent. ad valorem.

emitted inflammable perspiration of such a natural twin the sheet zinc which are the when the ribbon she wore was turne that when the ribbon she wore was continued in the state of the southern industrial in use, amounting to of fire like a lively "Roman candle."

And

It should be borne in mind that within two to be known as "Watling street." Mr. Patture that when the ribbon she wore was taken from her and exposed to the cold air it instantly took fire, and flashed with sparks of precious metals in use, amounting to of precious metals in use, amounting to of fire like a lively "Roman candle."

And

And

It should be borne in mind that within two to be known as "Watling street." Mr. Patture that when the ribbon she wore was taken from her and exposed to the cold air it instantly took fire, and flashed with sparks of precious metals in use, amounting to population is mainly due to another cause, namely, the drainage of vigor and capacity public.

which took place through the emigration to America in the first half of the seventeenth century. There is no doubt that the great mass of colonists were natives of middle and southern England, and that, although a considerable for the control of the control o case of this kind recently occured at the abattoir in Jersey City. During the recent spell of hot weather one of the workmen threw off his blue linen blouse, smoking with perspiration. It was hung up in the ice house. In a few minutes it burst in a corruscation of swarps and literally concies already developed by this increase in money facilities is shown in the remarkable statement that, during the year 1880, the amount of stocks sold on the New York Stock Exchange was 93,000,000 of shares, or nearly as much as the last two years combined, while in 1875 the shares sold numbered only 53,000,000. Another evidence of expansion may be noted in the magnitude of the exchanges recorded by the Clearing House in the city of New York for the first week of 1881. Deducting all the transactions arising from stock operations, the payments amounted to \$\$50,000,000 of the Edict of Nantes. We do not agree with him in assigning such large effects to the emigration. There were enough Puritans left in England to carry through the great rebellion and establish the Commonwealth. They were always in a decided minority, however, and it is probable that the depletion of the best elements in their ranks, the payments amounted to \$\$50,000,000 for through the prolonged strain of civil war, is mainly chargeable with the collapse of their political system after the death of Cromwell, and the comparative exhaustion of the southern population ever since. It is none the less true and striking that in the American mechanic we see what the artisan of southern England might have been had the Puritan Commonwealth survived.

After praising the workman of Yorkshire and Lancashire, Mr. Pattison tells him plainly wherein he, and the American mechanic whom he most resembles, fall short of the French artisan. Of two elements which French artisan. Of two elements which enter into the production of manufactured articles, namely, artistic design and mechanical ingenuity, the former is still possessed in a pre-eminent degree by the French as compared with the Anglo-Saxon race. We cannot expect to vie with them in this respect, because, says Mr. Pattison, our civilization is still young, and not yet permeated with artistic sensibilities. The subtlety of feeling and delicacy of hand requisite for goods whose value depends on style and fancy, imply a wide diffusion of good taste and hereditary aptitudes, as well as traditional processes, to provide the supas traditional processes, to provide the sup-ply. In a word, says Mr. Pattison, the tasteful designs of the French pre-exist in their gracious manners; their polite usages and their elegant patterns are only different manifestations of the intense life of a sensi-tive and highly trained race in possession of an old tradition. What is here said of England is emphatically applicable to the United States. It is doubtless true that a young nation can hardly have fine manners or the daintiness of hand and eye generated by refinement of life.

When we pass from industrial products intended for ornament, or in which a pleas-ing appearance is, at least, one of the ends in view, to things meant for use, we see at a glance the scope and source of American suglance the scope and source of American au-periority. In an old country there are not only inherited aptitudes and pervasive tastes, but also a surplus of labor and superabund-ance of time. In America, where a scarcity of skilled labor has, as a rule, prevailed, there is a strong stimulus applied to the originating power; a great premium offered for the invention of labor-saving machines and tools. Mr. Pattison cites from a report of the last Paris exhibition a comparison of of the last Paris exhibition a comparison of other exhibits of machinery with the American which is highly favorable to the latter. Of the French in particular it was said that, in the manufacture of machine tools, they do not seem to have grasped the leading principles of mechanics with sufficient thoroughness and insight to be capable of originating new forms and combinations. It was very different, we are told, in the American section, where novel arrange-ments of motion had given rise to new forms of framing, and where the designs have all the freshness of being struck from first principles. Mr. Pattison admits, too, that it is not merely in machines by which labor is economized that American intellectual fertility showed itself. This, of course, is demonstrated by our recent achievements in watchmaking, as well as by our earlier inventions of the revolver and the repeating

Now, the English artisan was not always behind the American workman in respect of inventive skill. Time was, Mr. Pattison re-minds us, when all the new discoveries in practical science, and improvements in ma-chinery and engineering, were first made in England; whereas now it is from America that all the new inventions natural enough that we should lag behind our English kinsmen in the colonial epoch, when we had, so to speak, no manufactures. But Mr. Pattison will find, we think, that the awakening of American inventive fer-tivity responded promptly to the call for it; that it was contemporaneous, in fact, with the first development of American industries on a large scale.

But what is the specific force that stimuates an American mechanic to invent the nnumerable things as to which the neceselt? What is it that quickens his faculties, out does not operate in the case of the Lancashire or Yorkshire workman? There were cashire or Yorkshire workman's There were only, it seems, 3,000 patents taken out last year in England, against about 12,000 granted in the United States. Mr. Pattison thinks one cause of the discrepancy is the greater expense involved in securing a patent right in England. We should lay scarcely any stress on this circumstance, from the fact that the cost of a patent is much less frequently borne by the inventor himself than by capitalists who promote the introduction of the invention. The funda-mental question is, why is capital so slow in England and so prompt in America to en-courage mechanical ingenuity? Because, compared with our own, England is an old

METALLURGICAL NOTES.

THE CHEMICAL REACTIONS IN THE BESSEMER PROCESS, THE CHARGE CONTAINING BUT A SMALL PERCENTAGE OF MANGANESE

The only investigations on record of the reactions occurring during the Bessemer blow are of charges containing a large percentage of manganese, with the exception of two partial analyses by Snelus and Barker of the English method, where a low percent-age of manganese was used. They do not age of manganese was used. They do not give the analysis of the spiegel, nor do they report any graphitic carbon after the first stage of the process. Both report only traces of manganese after the first stage until the addition of spiegel. The slags corresponding to the samples of metal were not analyzed. The samples for the following analyses, made by Mr. Charles F. King, of Newport, R. I., were taken at the Bethehem Iron Company's works, Bethlehem, Pa., on November 13, 1879, and the results submitted in a paper read before the American Institute of Mining Engineers. The blow lasted 18 minutes. The converter had 12 tuyeres, each with 12 holes of 3/2 inch diameter. The number of revolutions of blowing engine 2 minutes after start was 38 per minute, with a pressure of 28½ pounds; diameter. The number of revolutions of blowing engine 2 minutes after start was 38 per minute, with a pressure of 28½ pounds; 12 minutes after start, 43 per minute, pressure of 23½ pounds; and 15 minutes after start, 42 per minute. Eight samples of metal were taken, namely, one of the pig charged, three during the blow, one at the end of the blow, one of the spiegel, one of the final product, and one of the scrap charged befere the addition of metal to the converter. Five corresponding samples of slag were also taken. The samples of metal were cast in small ingots, and borings were taken from different parts of these ingots by drilling, great care being taken that they were not much heated while being drilled. The slags were dumped at once from the small ladle into a can of water so as to cool rapidly, and they were then dried in a thermostat. The sampling was done with care, particles of ganister and shots of metal being separated from the slag. The elements to which attention was especially directed, were graphitic and combined carbon, manganese and silicon. The results which are given below are similar to those obtained by others where the charges are manganiferous.

ANALYSES OF METAL.

Manganese	Silicon	Combined carbon.	Graphite	Total carbon	Specific gravity		
0.4956	2.384		3.16			Metal charged.	L
0.1511	1.10	2.784	0.438	3.199	7.4869	8 minutes after start.	II.
0.133	0.108	0.995	0.236	1.90	6.4476	after start.	Ħ
0.130 0.0761	0.036	0.1775	0.0007	0.2071	7.369	17 minutes after start.	IV.
0.097 0.105 0.069(7)	0.0369	0.0245	0.0005	0.0338	6.7056	zs minutes after start.	V.
16.13899	0.68	3.560	00 00 00 00 00 00 00 00 00 00 00 00 00	4.338	74.899	Spiegel,	AT.
1.17498 1.16610 0.0897	0.06015	0.340	0.0187	0.367	6.6907	Final product.	νп.
1.2203	0.103	0.2491	0.01493	0.2040	7.541	Serap.	VIII.

The results of the analyses of the slags are here given in tabular form:

ANALYSES OF SLAGS

	II.	III.	IV.	V.	VII.
	8 minutes after start.	15 minutes after start.	17 minutes after start.	r8 minutes after start.	After addi- tion of spiegel.
Specific gravity	2.079	2.282	2.411	2.937	3.770
Silica		73.214	75.604	61.293	
Alumina and phos- phoric acid	7.984	4-582	5.203		5.66x
Ferrous oxide }	1,966 1.8go	none.	none.		14.007
Mangan, oxide		11.83)		10.863	12.813
Lime	0.659	1.11c	0.960	0.747	0.745
Magnesia	0.444	0.641	0.300	0.288	0.241
Metallic iron	10.509	8.724	7.715	9.086	2.387

The conclusions to be drawn from the above analyses are :

1. Phosphorus is not eliminated where a silicious lining is used, but the proportion is slightly increased, owing to the diminution

anguly increased, owing to the diminution of weight of the charge of metal.

2. Graphitic carbon is converted into combined carbon, during the first period of the blow, by the elimination of the silicon, the total carbon remaining about the same. In the second period the total carbon is rapidly eliminated.

3. Silicon is oxidized during the first and second periods, at the conclusion of which it is nearly all oxidized.

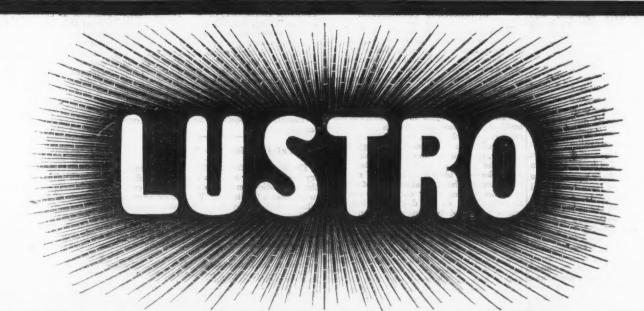
4. Manganese decreases rapidly during the first period, and more gradually during the remainder of the blow. 5. By the addition of the spiegel the man-gauese, carbon and silicon are increased in

the metal, and the iron in the slags is de-

6. The final slag carries the silicon and manganese of the charge, and contains 25.56 per cent. of iron.

per cent. of iron.

7. The first period, or eight minutes, is characterized by a low temperature, during which the silicon and manganese are oxidized; the second period of nine minutes, or "boil," is marked by a high temperature, during which the carbon is oxidized rapidly; and the third period, or last minute of blow, by the rapid oxidation of the iron. by the rapid oxidation of the iron,



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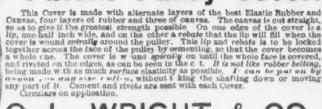
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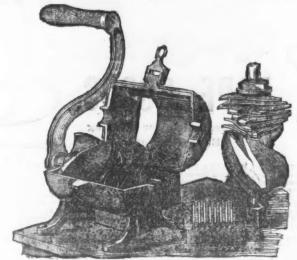
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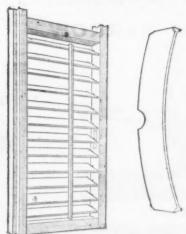
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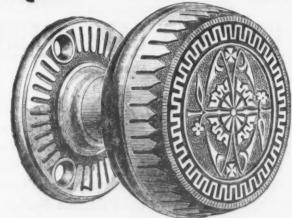
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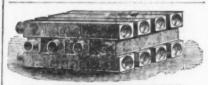
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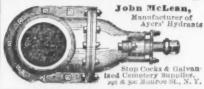




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Our 12 Coller WE guarantee to contain 12 pure Tin and ½ pure Lead, mixed and cast by the best known processes.

MF

This Solder we confidently believe to be unsurpassed by any Solder now offered to the trade, as it contains a larger proportion of Tin than Lead, and no other metals, thus giving to it a smooth and liquid flow and great tenacity.

SPECIAL MIXTURES

of Solder we make in any proportions specified by the purchaser, guaranteeing every bar to contain such proportions as may be desig-

Our solders never contain any other metals besides pure Tin and Lead, and upon the basis of the raw materials in large lots we always price our solder.

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Tin Plates, Metals, Sheet Iron, &c. PHILADELPHIA.

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TRENTON, N. J.

MANUFACTURERS OF AND LOCKS DOOR HARDWARE,

BRONZED IRON AND BRONZE METAL DOOR TRIMMINGS, BUTTS AND HARDWARE.

CAST BUTTS, DOOR BOLTS, WELL WHEELS, FLUSH BOLTS SHUTTER BOLTS, PAD LOCKS,

BARN DOOR HANCERS, & RAIL GRINDSTONE FIXTURES, SCREW & SIDE PULLEYS, NOISELESS PULLEYS, HAY FORK PULLEYS, SHELF BRACKETS,

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Having largely increased our facilities and line of gooods, we invite the attention of the Illustated Catalogues Furnished on Application.

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Malleable Iron and Tinned (pure Tin).

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"COMMON SENSE" MOUSE TRAPS. BEST IN MARKET. For Home & Export Trade. RIPLEY MFG. CO., Unionville, Ct., U.S.A.

Porcelain-Lined Lemon Squeezers, Mallets, Rosewood Faucets, Fatent Boot Jacks and House Furnishing Ware.

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Horse, Mule & Snow Shoes of the Perkins Pattern. Works at Valley Falls, R. I., and Buffalo, N. Y. Office, 31 Exchange Place, Providence, R. I. C. H. PERKINS Gen'l Manager. R. W. COMSTOCK. Secretar.

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15, 17 & 19 North Water Street, ROCHESTER, N. Y., Manufacturers of

Hardware Specialties, SPRACUE'S

"Perfection," "Combination" and other Razor Strops. Refer to The Iron Age first issue of each month.

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REVERSIBLE SELF-PACKING AND SELF-CLEANSING

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Full Leather, \$7.50. Half Leather, \$6.50.
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Address all orders to Pope & Stevens, General Agents, 50 Chambers Street, N. Y.
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FARLEY'S PATENT Rubber-Cushioned Casting Brush.



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79 H. WEINDEL, 405 N. Fourth St., Philadelphia, FIRST CLASS FLY-WHEEL AIR AND GAS PUMPS, For Scientific and Technical Several d. a. Pumps for the trade

All kinds Wagon & Carriage Axles LAMBERTVILLE IRON WORKS.

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PREVENTS RUST, TARNISH, &c., Arms, Machinery, Tools, Cutlery, Safes Skates, Stoves, Hardware, &c., without in BELMONTYLE OIL CO., Sole Manufacturers, 150 Front St., New York.

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No more Splicing or Winding Ends with Cord.



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Rope Halters, Horse Ties, Cattle Ties, Halter Leads, &c., made by clamping the lap with steel rings, as shown in cut. Also, clamping the end with a ring to prevent unbraiding.

This is all accomplished by machinery, and a superior article can be made at so much less cost, it will not pay any one to make up goods the old way. We are now prepared to furnish the trade the cheapest and best Rope Halters ever made. No. i illustrates the twisted and irregular form of the spliced Halter; also the insecure method of whipping the end with cord, which invariably comes off, and allows the rope to untwist. No. 2 illustrates the New Halter. It is made by clamping the laps with steel rings. The end is also secured with a steel ring, which will remain as long as the rope lasts. We have also a full line of

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CARDEN OR FARM BARROW,

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FOLDED FOR SHIPPING. These Barrows are made with double frames, boited together, iron braced, and so constructed that by removing one bolt (the axle) and two nuts, can be folded flat down (see cut), and shipped at lowest rate of freight. But a moment's time is required to set up for use,

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RAILROAD, ORE, BRICK and STONE BARROWS. Also, Road Scrapers, Road Plows, Levelers, &c. REVOLVING SCRAPER CO., OHIO, U. S. A.

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SUCCESSORS TO THE

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Union Spring Co.

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A Pronounced Success. all mechanics and builders cheapest Spring made. or pins to be broken easiest and most persomest, as well as the

Acknowledged by to be the best and No small castings or lost. The simplest, fectly adjusted. The handmost durable Spring made.

We Manufacture them in Four Sizes, either Coppered or Japanned.

No. 9-For Screen and Light Doors, No. 7-For Large Doors and Gates.

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BRASS PAD LOCKS Railroad Switches, Freight Cars, and the Hardre Trade. All sizes, with Brass and Steel Keys hand without chains.

Patent Horizontal Rim Cylinder Night Latch. Self-adjusting to doors of any thickness, with Patent Stop and Drawer B RIGHT OR LEFT HAND.

PASSENGER CAR LOCKS, Bronzed, Nickel-Plated and Japanned. Catalogues and Samples sent upon application. BROOKLYN, N. Y.

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MANUFACTURERS OF

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DOOR BOLTS,

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Special Notices.

TO MANUFACTURERS.

A Manufacturer's Agent about making a trip to all the principal Western cities, is open to nego-tiate with one or two manufacturers to represent their interests in that section. Having an ac-quaintance of many years with all the leading jobbing hardware buyers, is able to offer special inducements to such as desire to avail themselves of his services. Addross of his services. Address X. Y. Z., Office of *The Iron Age*, 83 Reade St., New York

SECOND-HAND and NEW TOOLS FOR SALE LOW.

January List, No. 2.

January List, No. 2.

Pit Lathe, 31½ ft. swing, will turn a pulley as wide as o ft. face.
Pit Lathe, 16 ft. swing, will turn a pulley 30 inch face, with gear-cutting attachment.
Lathe, 100 in. swing, 18 ft. bed.
Lathe, 22 in. x 3½, New.
Lathe, 24 in. swing, 8 ft. bed.
Lathe, 10 in. swing, 8 ft. bed.
Lathe, 10 in. swing, 6 ft. bed.
Lathe, 15 inch swing, 6 ft. bed.
New.
Engine Lathes, 4 ft bed.
Five Hand Lathes.
Horizontal Drilling Lathe, 24 in. swing, 10 ft. bed.
Hand Planer, 20 in. x 3 ft.
Pianer, 32 in. wide, 6 ft. long.
Planer, 32 in. wide, 6 ft. long.
Planer, 33 in. wide, 8 ft. long.
Planer, 32 in. wide and Shear.

Sxrz Horizontal Engine, 8 x 12.
Two McKennie Cupolas, 4 ft. x 4½ inside.
Ladles, &c., &c.
Seven Cranes.
Jig Saw.
Pattern Makers' Lathe.

Seven Cranes.

Jig Saw.
Pattern Makers' Lathe.
Post Drills.
Lathe, 16 x 6.
Drills, 36 in. New.
Shaper, 15 in. New.
Shaper, 2 in. New.
Shaper, 2 in. New.
Shaper, 2 in. stroke.
Gear Cutter.
600 lb. Steam Hammer.
1000 lb. Steam Hammer.
Suspension Drill.
Rotary Shears.
Lot of cheap Lathes and Heads, Planes and
Lathe Tools, Mandrels, &c.

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The Geo. Place Machinery Agency, 121 Chambers and 103 Reade Sts.,

NEW YORK. An Experienced Lead Burner,

wanted for erecting and maintaining sulphuric acid chambers.

MATTHIESSEN & HEGELER ZINC CO.,

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January 1, 188 The copartnership heretofore existing between John H. Butler and Teunis D. Huntting, under the firm name of Butler & Huntting, has this day been dissolved by the withdrawal of said Teunis D. Huntting

dissolved by the withdrawal of said Teunis D. Huntting.
Mr. Butler and Mr. John C. Constant have this day formed a copartnership for continuing the business at the same place, under the firm name of Butler & Constant. Mr. Butler will pay all obligations, and receive all assets of the old firm of Butler & Huntting.

JOHN H. BUTLER.

JOHN H. BUTLER, TEUNIS D. HUNTTING, JOHN C. CONSTANT.

A GERMAN GENTLEMAN, having done business successfully for 12 years in this country or his own account in the Hardware and Stove line and with best references, wishes to make arrange ments with parties for the sale of their goods in Germany, and also for the purchase of German goods for this market, either on commission of on a salary. Address, at once,

F. H.,

Office of The Iron Age 83 Reade st., New York.

The Sherman Process Co.

9 Pemberton Square, Boston, Mass., Issue Licenses to use the Process for the Manufacture of Iron and Steel

In the Bessemer Converter, Crucible, Siemer Martin, Puddling, Blast and Cupola Furnaces. The use of this Process improves the quality of the product, saves fuel and labor, and does not require any change in furnace or manner of working See page 17 of The Iron Age of Oct. 25th, 1877.

SECOND-HAND

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BOUGHT, SOLD & EXCHANGED BEECHER & PECK,

Lock Box 122, New Haven, Conn.

One-Thousand-Pound

STEAM HAMMER

FOR SALE.

In good order, and can be seen at our works. WOOD, SMITH & CO.

RURNACE MANAGER.—A gentleman of techmical education and large practical experience
in this country and Europe, thoroughly practical
in all departments of fron making, desires a position as manager of blast furnaces of, any capacity
and with all kinds of stock. Address,
PRACTICAL FURNACE MANAGER,
Office of The Iron Age, \$3 Reade St., New York.

Special Notices.

Rolling Mill for Sale, SPECIAL NOTICE TO IRON MEN

A Rare Opportunity for Investment.

The undersigned Assignee and Trustee of the RIVERSIDE ROLLING MILL COMPANY, a corporation organized under the

corporation organized under the laws of Ohio, invite proposals for the purchase of the property and real estate of the above-named Rolling Mill Company.

The opportunity is one of the rarest for Rolling Mill and Iron Men. The Mill is a new one, and is located in the village of Riverside, just outside of the corporate. side, just outside of the corporate limits of Cincinnati. It has excellent river and railroad facilities, probably unsurpassed. The Plate Mill has capacity for a very large product, particularly of Boiler Plate of large dimensions. There are also a sixteen-inch Bar Mill and a Guide Mill, both having full complement of rolls. The Bar Mill and Guide Mill have not been set up. The works have been in operation but a few months, and already have a large and lucrative custom. It has had more orders than could be filled, and is at present in operation, more recently under the practical direction of Mr. Wm. H. Carruthers. The mill was built under the superintendence of one of the lent river and railroad facilities. the superintendence of one of the best men in the country.

AARON A. FERRIS, Assignee, W. H. CARRUTHERS, Trustee,

of the Riverside Rolling Mill Company,

Cincinnati, Ohio.

For Sale.

7 x 10 DOUBLE ENGINE, Link Motion. Suitable for Mine, Furnace or Quarry hoisting. Been used one week only.

A. G. BROOKS & WINEBRENER. 26z N. 3d St., Philadelphia.

POR SALE.—NUT AND BOLT MACHINERY—By the National Machinery Co., of Cleveland, O.—The only specialists in this line in the U. S. Two new Hot-pressed Nut Machines, small sizes. Two new Hot-pressed Nut Machines, small sizes. Three second-hand Hot-hummered Nut Machines. Three second-hand Hot-hummered Nut Machines. One ad-hand Burdick Rivet and Heading Machines. Six new Chapin Headers, for carriage and small work. Bolt Cutters, second hand—we have 12 of different makes, Wiley & Russell, Mayo, Merriman, &c. Three new small National Bolt Cutters. Six new No. 4 National Bolt Cutters, cut to 1½. Two new No. 5 National Bolt Cutters, cut to 1½. Two new No. 5 National Bolt Cutters, cut to 1½. Two new No. 6 National Bolt Cutters, cut to 1½. Two new No. 6 National Bolt Cutters, and 3½ to 4. Four new Double-head National Bolt Cutters. The National Head and Case Die on these, we guarantee, place them ahead of anything offered in the market. Three new Single Rapid Bolt Cutters. Four new Double Rapid Bolt Cutters, suitable for for bolt and nut shore, including such tools as Cam Header, S. Upsetters (cold and hot), Bolt Pointers, Head Shavers, Nut Burrers, Tire blank machy, &c.

Chilian Mill for Sale.

One Double Chaser Chilian Mill, complete with gearing for driving it. Suitable for grinding ores, fire-brick, cinders, &c.

Sk-tch with measurements on application.
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At 110 Chambers St., New York, on the ground floor.

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VALUABLE WATER FRONT ON EAST RIVER, Between Eighth & Twenty-third Sts., FOR SALE.

Suitable for iron works or manufacturers, where arge water facilities are required. About 50 lots, acluding land under water. CHAS. S. BROWN, 77 Liberty St., N. Y.

Horizontal Boiler, 42 in. x 10 ft., 28 4 in. Horizontal Boiler, 42 in. x 10 ft., 28 4 in. Horizontal Boiler, 40 in. ON HAND AND FOR SALE. er, 42 in. x 10 ft., 90 2-in. tubes, 5-16

Solution of the state of the st

TO MANUFACTURERS.—A gentleman who has traveled over ten years among the Eastern and Western Hardware trade, wants a line of specialties in Hardware goods to sell on commission on account of manufacturer. Personal attention given. First-class references, Address J. L., Office of The Iron Age, 83 Reade St., New York.

OPEN-HEARTH STEEL.—A gentleman having OFEN-HEARTH Scheme ir one of the leading open-hearth works of this country will be open for an engagement January 1, 1881. Is competent to design, superintend construction and manage works when completed. Address

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Sanderson Bros. Steel Co.

A limited number of shares for sale by EDWARD FRITH & SON, 241 Pearl street, New York.

Special Notices.

For Sale. Second-Hand Machinery, CHEAP.

YORK & SMITH,

For Sale.

FOUNDRY AND MACHINE SHOP, Estabshed 1842. Well stocked with Patterns and louis, Business good. Satisfactory reasons for A. L. VAIL, selling. Address

For Sale.

One pair CHILL ROLLS, 25 inches diameter, 131/2 inches long; necks, 16 inches diameter, 131/2 inches long; wabbler, 14 inches diameter, 71/2

nches long. Cne pair PINIONS, 25 inches diameter, 30 inches o outside of shrouds; necks and wabblers same Six COUPLING BOXES, for above rolls and one POPPET VALVE ENGINE, 20-inch bore, 5-foot stroke, with cast-iron fly-wheel in eight sections, 15 feet diameter; rim of wheel, 11 x 12 m. Engine is now in position at our mill.

BRITTON IRON & STEEL CO., Cleveland, Ohio.

For Sale.

Hardware Business of 20 years' standing. Stock will invoice about \$10,000. Fresh and in good condition. To a party with the money this is an opportunity that seldom offers.

For particulars inquire of JOHN BINDLEY,

186 Federal street,

Allegheny City, Pa.

For Sale.

One Horizontal Boiler, one 14 in. flue, 16 feet long, 30 in. diam.

One Horizontal Boiler, two 11 in. flues, 18 ft. long, 32 in. diam.

Long, 32 in. diam.

Long, 32 in. diam.

Long, 4 in. diam.

Long, 4 in. diam.

Long, 5 in. diam.

Long, 6 in. diam.

Long, 6 in. diam.

Long, 6 in. diam.

Long, 6 in. diam.

Long, 7 in. diam.

Long, 7 in. diam.

Long, 7 in. diam.

Long, 8 in. diam.

Long, 10 lot. ABB 011.00 (1997)

For Sale.

Stock of hardware, stoves and implements, and store furniture, in one of the best towns in Kansas. HARDWARE, Address

Box 366, Salina, Kansas.

For Sale.

HARDWARE.-The controlling interest or the whole of a Jobbing Hardware House, already esparticulars, address C. A., Office of The Iron Age, 83 Reade St., New York.

For Sale.

LARGE SLOTTER, 6 ft. between Columns, 4-ft. Table, stroke 18 in., ind. cross and circular move-ments. A heavy, well-built tool; in first-rate order; will be sold low. Photo, on application,
A. G. BROOKS & WINEBRENER, 261 N. Third street, Philadelphia.

For Sale. PARIS FURNACE CO.

A fine manufacturing property, located at Clayville, Oneida Co., New York, 11 miles south of Utica. Two distinct Water-powers, Steam Engine, Shafting, Hangers, Pulleys, &c. Works built and used for manufacturing Scythes, Forks, Hoes, &c. For terms, description, &c. address B. F. AVERY & SONS, Louisville, Ky.

FOR SALE.

Job Lots and Bankrupt Stocks Hardware. Great bargains offered to the trade.

> A. W. WHEELER. 141 Lake St.. Chicago, 111.

ENGINE AND BOILER FOR SALE.

Steam Engine, 6 x 15, with 15-horse-power boiler, feed pump and heater, nearly new and in good order. One (1) second-hand "Peck" Lifter, not genered; will raise hammer of 200 los, in weight, BEECHER & PECK, Lock Box 122, New Haven, Conn.

Notice.

To Manufacturers of Farming Tools.

I want a party to manufacture a NUMBER ONE
HAY KNIFE on Royalty, or will sell the patent
on reasonable terms. Address

A. ZIMMERER,
Cafe Bischof & Zimmerer, Hardware,
Nebraska City, Neb.

Special Notices.

Second-Hand and New Machinists' Tools,

One Engine Lathe, 90 in. x 20 ft. Ames, new. One Engine Lathe, 35 in. x 24 ft. Ames, new.
One " 32 in. x 15 ft. Ames, new.
Two " 24 in. x 12 ft. Ames, new.
Two Engine Lathes, 18 in. x 2 ft. Ames, new.
Two Engine Lathes, 18 in. x 8 ft. Jones & Lamson Two Engine Lathes, 18 in. x 7 ft. Two Engine Lathes, 18 in. x 7 ft.

Two Engine Lathes, 19 in. x 8 ft. Pond, new.

Two Engine Lathes, 19 in. x 10 ft. Pond, new.

One Engine Lathe, 16 in. x 6 ft. New Haven.

One a in. 16 in. x 6 ft. Ames, new.

One Engine Lathe, 15 in. x 6 ft. Cady, good order. One Engine Lathe, 14 in. x 5 ft. Harris, good order. One Engine Lathe, 14 in. x 4½ ft. Putnam, good orde One Engine Lathe, 11 in. x 5 ft. Prentice, new. One Engine Lathe, 11 in. x 4 ft. Prentice, new.

Two Fox Lathes. Six Hand Lathes, 11, 14 and 16 in. s. x 416 to 7 ft. bed. Cne 24-in. Shaper. Hendey Mch. Co., new. Four 9 in. "Hewes & Phillips. One 15-in. stroke Shapers. Hendey Mach. Co., new. One 24 in. x 6 ft. Planer. Ames. One 24 in. x 5 ft. Planer. Whitcomb, new.

One 24 in. x 5 ft. Moore & Wyman. Two 36 in. Drills, bk. geared and self-feed. L.W. Pond. One 34 in. Drill, Bk. Geared. Two 24 in. Drill, bk. geared or self-feed. Ames, new. Three 20 in. Drills. Prentice, new One 6-Spindle Horizontal Drilling Machine. One 5-Spindle Horizontal Drill.
One No. 4 Wilder Punch Press. New. Geared.
One No. 6 "Shear Geared."
Belting, Shafting, Pulleys and Miscellaneous Machin-

E. P. BULLARD, 14 Dey St., New York,

GENERAL EASTERN AGENT FOR Akron Iron Co.'s Hot Polished Shafting.

PHILADELPHIA, Jan. 1, 1881.

TO THE TRADE. The undersigned, the last representative of the firm of J. BARTON SMITH & CO., established in 1842, finding it no longer possible to alone give proper attention to the increased demand for its celebrated brand of Files and Rasps, has transferred the business to the J. BARTON SMITH COMPANY. Thanking the trade for its libera patronage in the past he respectfully solicits of

continuance of the same for the new firm. CHARLES F. CRIPPS. Office and Works of the J. BARTON SMITH Co.,

Nos. 211, 215, 217 New Street, Philadelphia, Jan. 1, 1881. Nos. 211, 215, 217 New Street,
PHILADELPHIA, Jan. 1, 1881.

Referring to the above, the undersigned bez to
assure the trade that they will faithfully preserve
in the future the high reputation of the well-known
goods of the late firm of J. Barton Smith & Co.,
and with largely increased facilities will be able to
promptly fill all orders they may be favored with.
In addition to the line of Files and Rasps, they
will also manufacture a full line of Wood Saws,
Butchers' Saws, &c., of equal merit to the best
made, soliciting the favors of the trade at lowest
market rates. Respectfully,
CHARLES F. CRIPPS, Presidert.
GILBERT PARKER, Treas, and Genl. Agt.
New York Branch, No. 123 Chambers Street,
Wm. H. Bramhall, Manager, P. Q. Box 2813.

Bissell & Welles.

Wholesale Hardware Auctioneers, 83 Chambers and 65 Reade Sts., N. Y. Sales held weekly for the trade. Consignment olicited. We refer to the leading Manufacturers

and importers. To Manufacturers and Hardware Merchants.

WANTED.

By a man of experience in positions of trust, who has a knowledge of the requirements of the export trade in American Hardware, having resided and traveled abroad for business, also held for several years past a responsible position in a manufactory, a new engagement as office man or travel to solicit trade and establish connections in foreign countries.

Address,

Address, ENTERPRISE, Office of The Iron Age, 83 Reade Street, N. Y.

Situation Wanted as Mill and Forge Manager. Have had large ex tablished and doing a profitable business; located perience both in this country and England in the in one of the large Western cities. For further practical management of Bar, Plate and general Merchant Mills.

> Address, SAMUEL ADAMS, McKeesport, Pa.

Wanted.

TO PURCHASE 8 or 10 NAIL MACHINES Please address, stating size, condition and price, NAILER,

Care of Jos. D. Weeks, Office of The Iron Age, 77 4th Ave., Pittsburgh, Pa.

Wanted.

Position in an iron works by a party of 25 years experience, having served as superintendent and finally as president in a well-known rolling mill. Can refer to business firms of highest standing. Does not expect more than fair compensation. Address, than fair compensation.
T. C. C.,
Louisville Rolling Mill Co.,
Louisville, Ky.

Wanted.

A person familiar with the outside work connected with a Coke Furnace in the country, such as understanding the management of ore and coal mines, surveying them, and hiring as well as directing general labor, &c. Best of references required. Address P.O. BOX 32, Philadelphia, Pa.

Wanted.

HARDWARE SALESMAN.

One with established trade preferred.

Office of The Iron Age, 83 Reade St., New York. SITUATION WANTED—By a young man in a hardware manufacturing establishment, or to represent one or more first-class Eastern establishments in Pittsburgh. Is used to the Saddlery, Carriage and General Hardware business. Is connected with a hardware jobbing house at present. No. 1 reference given. Address
HARDWARE,
Office of The Iron Age. 77 4th Ave. Pittsburgh, Pa.

Special Notices.

Large Stock of New and Second-Hand

MACHINERY.

Three pair Scales, weigh to 3500 lbs. Fairbanks, One Horizontal Corliss Engine, 200 h. p. One belamater Sugar-house Engine, 26 in.x48 in. One Horizontal Engine, 25½ in.x30 in. Todd & Rafferts.

One Horizontal Engine, 15½ in.x3o in. Todd & Rafferty,
One Horiz'l Engine, 9 in. x 12 in. Erie Iron Works,
Five Horizontal Engines, 9 in. x 12 in.
Four Horizontal Engines, 8 in.x2 in.
One Horizontal Engines, 8 in.x2 in.
One Horizontal Engine, 3 in.x6 in.
One Portable Engine, 5 in.x6 in.
One Hor. Tubular Boiler, 6 ft x14 ft. 67 4·In. tubes.
Two Hor. Tub. Boilers, 5 ft.x14 ft., 50 4·In. tubes.
Two Hor. Tub. Boilers, 5 ft.x14 ft., 50 4·In. tubes.
Two Hor. Tub. Boilers, 5 ft.x17; ft., 24 4·In. tubes.
Three Hor. Tub. Boilers, 4 ft.x17; ft., 24 4·In. tubes.
Three Hor. Tub. Boilers, 4 ft.x17; ft., 24 4·In. tubes.
One 10 H. P. Upright Engine and Boiler complete,
E. H. Hampson.
One Steel Locomotive Boiler, 25 H. P.
Lot Shafting, Pulleys and Hangers.

MACHINISTS' TOOLS.

MACHINISTS TOOLS.

Two Hydraulic Presses, 8-in. ram, in perfect order, One Lathe, 20 in, x 16 ft., screw-cutting.
One Lathe, 16 in., 6 ft. bed.
One Planer, 22 in x5 ft. bed.
One Planer, 22 in x5 ft. bed.
Chain feed.
Two Crank Planers, 18 in.x2 ft.
One New Haven Drill. Will bore in center of 60 in. Two Ensley Drills.
One Vertical Boring Mill, bore from 26 to 90 inches.
One Turn Table and Boring Mill, 21 feet between One Travis Boring Mill.
One Merrill Compressed Air Hammer, Hotchkiss One Upright Drill, to the center of 64 in. [Fatent. Cne Eighteen Drilling Machines.

One Upright Drill, to the center of 64 in. [Paten One Upright Drill, to the center of 64 in. One One Dogardus Mill, No. 5. One Bogardus Mill, No. 5. One Soot on Hydraulic Press and Pump. One Boudgeon Beam Punch. One Hand Punch. Pope's patent. Three Vacuum Tanks, 6 ft.x12 ft. One hundred Vises. Five Portable Forges. Colton Drawing Machine. One Guild & Garrison Pump, No. 3. Six Hardick Pumps, from No. 5 No. 4 New. One Woodward Pump, No. 1. 7900 lbs. ½ Plate Iron, for safes. Five smaller. A full line of Woodward Steam and Fire Pumps

Five smaller. A full line of Woodward Steam and Fire Pumps, One hand-power Paper Cutter. GRAY'S MACHINERY DEPOT. 37 Dey Street, New York, U. S. A.

To Railroad Engineers, Im-

porters and Others.

DAVID OWEN, Inspector of Steel and Iron Rails,

Merthyr Tydfil, England, Undertakes the inspection of Steel and Iron Rails, Permanent Way Materials, &c., &c., in England, Belgium and Germany. Thoroughly practical, of many years' experience. Can give very best of references from chief railroad engineers, merchants and others who have employed me to inspect their railroad materials during manufacture and delivery for the last to years.

Correspondence solicited. Instructions by mall or cable punctually attended to.

L. SALOMON, Importer of and dealer in Upholsterers' Needles, Gilt Nails and

Housefurnishing Hardware. Agent for the Champion and Standard Knoz No. 10 Murray St., New York.

THOSE WISHING TO BUY OR HAVE FOR SALE SECOND-HAND

PRESSES or DROP HAMMERS

will please communicate with N. C. STILES,

Middletown, Conn. Slate Planer Iron.

Size of Bed 12 ft. x 4 ft.; price with countershaft, \$500. Also 10,000 ft. 3 in. and other sizes Wrought Iron Steam Pipe ; 2000 ft. 6-in. Cast-Iron Heating Pipe. For sale by

A. PURVES & SON,

South and Penn Sts., Phila. CRUCIBLE CAST STEEL.

Wanted, by an old-established Sheffield firm, a responsible agent with good connections and references, who would buy Tool Steel, &c., for his own account. Apply

BOX 40, Post Office, Sheffield, England.

Europe.

Matheson & Grant's

32 Walbrook, London, England. Engineers and Commission Agents for all busiess relating to engineering and metals in Europe.

Telegraph address. MATHESON, WALBROOK, LONDON.

STEEL:

Its History, Manufacture, Properties, and Uses. By J. S. JEANS,

Secretary of the Iron and Steel Institute. Section I. History of Steel: Chap. I. History of teel; 2. Early History in England; 3. Progress of Inention; 4. History of Bessemer Process; 5. Siemonalarkin Process; 6. Other Steel making Processes; 7. teel in America; 8. Germany; 9. France; 10. Austria; 1. Raesila; 12. Sweden; 13. Other Countries—Section cel in America; 8. Germany; 9. France Raissis; 12. Swedeno; 12. Chep. 14. Cen. Manufacture of Steel: Chap. 14. Cen. Manufacture by E. ss; 16. Siemens-Startin Process; 17. O. Section III. Chemical and Physical cel: Chap. 18. Phosphorus in Steel; 21. Sulcon is Steel; 22. Sulcon is Steel; 23. Tensile Stren. Mechanical Tests of Steel; 25. Analytotion W. Lacs of Steel; 26. Analytotion of the Steel Chap. 26. To Ship of the Steel Chap. 26. To Ship of the Steel Chap. 26. June 20. June 20

For Sale by DAVID WILLIAMS,

83 Reade St., New York.

Trade Report.

Office of The Iron Age, Wednesday Evening, January 19, 1881.

During the past week the Wall street markets have been active and strong. The ruling rates for call loans on the Stock Exchange were 5 % @ 6 %, exceptional loans having been made both above and below these figures.

The importations of specie and bullion at this port during the week ending January 14, were \$124,772, consisting of \$80,820 in gold and \$43,952 in silver, as against a total of \$328,726 for the week ending January 17 last year. The importations since the 1st of January and since the 1st of August compare as follows with the movement during the corresponding periods last year:

	Since Ja	nuary 1
Gold	1881. \$1,239,899 53,973	\$358,064 \$35,981
Total	\$1,293,872	\$494,043
GoldSilver	1886-81.	1879-80. \$75,386,036 3,113,495
Total	\$70,876,091	\$78,499,531

During the week government bonds advanced 1/8 @ 1/4-the latter 4s and 41/2s. State bonds were quiet and firm; railroad bonds strong, with a decided upward ten-We give below the closing quotations of governments.

The general stock market has been alternately strong and weak, but in the main strong. The telegraph stocks were strong early in the week, but later experienced a decline.

The special meeting of the Board of Directors of the Western Union Telegraph Company was concluded at 1.30 o'clock this afternoon. Among those present at the meeting were the following: Norvin Green, Edwin D. Morgan, W. H. Vanderbilt, Augustus Schell, Harrison Durkee, Samuel F. Barger, Joseph Harker, Hamilton McKay Twombley, John Van Horne, Cornelius Vanderbilt, Wilson J. Hunt, Edward S. Sanford, John R. Duff, D. O. Mills, Oliver H. Palmer, James H. Banker, Samuel A. Munson, Anson Stager, Edwin D. Worcester and William D. The meeting was reported to have been held with closed doors, and was very harmonious. At the close of the session Dr Green said the agreement had been unanimously adopted by the directors of the American Union and Western Union Companies, and would be by those of the Atlantic and Pacific Telegraph Company, who will meet this afternoon at the general offices, No. 145 Broadway.

The general features of the agreement, said Dr. Green, have already been published; but as the matter is considered by the board as being still unfinished business, the directors did not think it judicious to make the details public. It was not improbable that the document, as a whole, might be kept private until after the meeting of the stockholders and their ratification of it. This Western Union. meeting would be held about 15 days hence.

The principal dealings were in the railroad stocks usually most active, and in telegraph stocks. We give below the closing quotations of active stocks.

The following is an analysis of the bank totals of this week compared with that of

last week:	Jan. 8.	Jan. 15.	Com	parison.
Loans	\$304,080,200	\$302,864,300	Dec.	\$1,215,000
Specie	61,918,900	65,462,500		3,513,600
Legal t'nd'rs.	13,817,400	15,686,100		1,868,700
Tot. reserve.	75,706,300	81,148,600		5,382,300
Deposits	285,787,700	292,376,800	Ine.	0,589,100
Reserve re-			*	
quired	71,446,925	73,094,200	Inc.	1,647,275
Surplus	4,319,375	8,054,400	inc.	3,735,025
Circulation	18,420,200	18,425,000	Dec.	1,200

For the week ended January 15

Total for week Prev. reported.	\$2,228,482 4,267,832	\$6,084,726 6,915,599	\$9,484.024 6,803,512
Since Jan. 1 Included in			
chandise for t			
Annual Control of the		Quant	174m WF - 1 1

Quantity Value

	Quantity.	value.
Anvils	337	\$3.56r
Brass goods	65	6,086
Bronzes		558
Chains and anchors	56	3,669
Copper	** **	12,293
Cutlery	243	52,014
Pins	6	623
Gas fixtures	3	791
Guns		20,516
Hardware	131	5,043
Iron, pig, tons		47,959
Iron, sheet, tons		5,340
Iron ore, tons		13,709
Iron, other, tons		75,707
Metal goods	178	17,027
Needles		9,471
Nickel		3,004
Old metal		4,873
Plated ware		900
Percussion caps		189
Saddlery		1,370
Steel		77,004
Silverware		198
Tin, boxes		177.545
Tin, 8,959 slabs; 777,738 lbs		197,083
Wire		9-475
Zine	TST-252	O. roo

EXPORTS, EXCLUSIVE OF SPECIE.

For the week Prev. reported.	1879. \$4,247,380 4,429,575	1880. \$5,687,823 4,998,157	\$6,480,266 6,772,531
Since Jan. 1	\$8,676,955	\$10,685,980	\$13,252,797

EXPORTS OF SPECIE.	
For week ended January 15:	
Total for the week Previously reported	
Total since January 1, 1881	
Same time in 1879	1,102,609
Same time in 1878	
Same time in 1877	

			_																			
	time																					7,626,8
	time																					2,050,0
me	time	in	1873						0	۰	0	0	0	×	×	×						5,977.1
me	time	in	1872	•								0			*		×	×	k	,	*	915,0
Cla	FOFF	P37.6	Arre		3.	ы	91	 3	a		60	4	H	,	H	h	è			0	logo	WO

quoted as follows:	
Bid.	Aske
U. S. 6's 1831 registeredto15%	101
U. S. 6's 1881 coupon 10158	101
U. S. 5's 1881 registered 1003/8	100
U. S. 5's 1881 coupon	TO
U. S. 41/2's 1891 registered	II.
U. S. 41/2's 1891 coupon 1123/8	III
U. S. 4's 1907 registered11314	II
U. S. 4's 1907 coupon 1131/4	11
U. S. Currency 6s 1895	-
U. S. Currency 6s 1896129	
U. S. Currency 6s 1897	40.00
U. S. Currency 6s 1898	-
U. S. Currency 6s 1899	-
The following were the closing que	otation

3½ 8758 24¼

9534

	The following were the closing que	stati
		/ca ci
	of active shares:	As
	Bid. American Union Telegraph	23.5
	American District Telegraph 66	
	Atlantic and Pacific Telegraph 461/2	
	Alton and Terre Haute 43	1
	Arizona436	
	Burlington and Quincy	1
	Bur., Cedar Rapids & North 78	
	Canada Southern 8736	
	C. C. and I. C	
	Colorado Coal and Iron 391/2	
	Codar Falls	
	Col., Chic. C. and Indiana 92	
	Chic., St. Louis and New Orleans 541/2	
	Chesapeake and Ohio. 32/4 Chesapeake and Ohio. 32/4 "st Pref. 33 "st Pref. 25 Central Iowa. 40 Denver and Rio Grande 59/4 Deadwood 23	
	" " 2d Pref 25	
	Central Iowa40	
	Denver and Rio Grande 89%	
	Delaware Lack and Western vist	- 1
	Delaware & Hudson Canal1021/2	1
	Express-Adams130	1
	Wells, Fargo114/2	I
1	" United States 56	
1	Excelsior Mining 61/2	
1	Erie 315/8	
1	Price and Western 931/4	
1	Homestake 27 M	
Ì	Hannibal and St. Joseph 561/2	
	" Pref107%	1
1	Int. and Great Northern 59/2	
1	Iron Mountain 6c %	
1	Indiana, Bloom, and Western 58	
1	Keokuk and Des Moines 19	
1	Kansas and Teras	
	Louisville and Nashville 92	
1	Louisville, New Albany and Chic 10	
1	Lake Shore	1
	Michigan Central	1
1	Morris and Essex 12414	1
l	Metropolitan Elevated	1
1	Manhattan Elevated 37	
į	Marietta and Gincinnati Pref 1378	
Ì	Central Iowa	
J	Nash, and Chattanooga 70	
J	New York Elevated	1
ı	New York Central15378	1
1	New Jersey Central 9058	
1	Northwest	I
1	Ohio	
l	" Pref	1
l	Onto Central	
l	Ontario and Western	
ì	Omaha	
ł	" Pref	1
ł	Poet Island	1
	P., T. and Buff 42	
	Panania230	2
	Pacific Mail	
	Rome, Watertown & Oc. 32%	
	Ohio	
ĺ	Quicksilver 1512	
	Silver Cliff	
I	Standard 4%	
ĺ	Stormont 2	
	Sutro Tunnel 11/4	
	St. Paul	1

Texas Pacific... Union Pacific... Wabash.... MINING STOCKS. The following were the closing quotations

of mining stocks:

123 4834

	Bid.	Aske
Amie	46	
Alice	6.50	7.5
Alta Mont	1.80	2.
American Flag	23	3
Bell Isle	45	
Bechtel		
Bassic	12.00	16.
Buckeye		5
Bull Dom		3-
Bulwer		
Bodie		5.87
Calaveras	21	22
Cale. B. H	75	1.0
Climax	44	
Consolidated Virginia		2.
Consolidated Imperial		-
Consolidated Pacific	1.00	1.0
Chrysolite	c.821	
Dunderberg		2 orra
Dahlonega	0	1
Durango	17	,
Eureka C	-/	21.0
Findley		28.0
Great Eastern		
Gold Placer		
	2.30	- 1
Goodshaw		1 :
Granville	5	
Green Mountain	4.80	4-9
	1.30	1.3
Horn Silver		
Independence	26	
Lacrosse	27	2
Leadville	50	
N. Y. & C	-	1.4
North Stan		1.0
N. Bell I	43	-
Red Eleph	30	4
Rappah'k	14	X
Robinson	7.00	7.375
S. Hite	54	5
Silver Cliff	4.55	4.6
Tioga	70	7
Tuscarora	26	3
Unadilla	13	I
Willshire	1.30	1.4

GENERAL HARDWARE.

The volume of business during the week under review was satisfactory, when the season and the difficulties attending transportation are considered. The manufacturers of Strap and T Hinges held a meeting in this city to-day, but their business was not conconcluded at the time of going to press. The Stamped Ware manufacturers been in session for several days at the Astor report of the National Hardware and Stove House, but at the close of business to-day their action had not transpired.

We have received the following circulars: STEBBINS' MOLASSES GATES. Office of Sargent & Co, 37 Chambers street, New York, January 19, 1881.

To the Trade: For above goods we shall be pleased to furnish quotations, assuring dealers that our prices are reduced to a rate consistent with our increased and more economical facilities for producing them.

Very respectfully, SARGENT & Co.

NEW BRITAIN, CONN., January 19, 1881. To the Trade: We beg to withdraw all quotations for Stebbins' pattern Molasses and Oil Gates, and invite inquiry from parties desiring to purchase at low figures.

LANDERS, FRARY & CLARK.

MIDDLETOWN, CONN., January 15, 1981. At a meeting of the Pump Manufacturers of the United States, held at the Osburn House, Rochester, N. Y., January 12, 1881, the following prices were unanimously adopted: adopted: Dis. per cent. Pumps. 40
Horizontal and Hand Rotary Pumps, including
Rotary Barrel Pumps. 35
Hydraulic Rams and Garden Engines. 30

Respectfully soliciting your orders, we remain, very truly yours,
W. & B. Douglas. The Putnam Nail Co., Boston, Mass., have issued a revised price list for Horse Shoe Nails under date of the 1st instant, which is

as follows:

The list is subject to discount to per cent. 8936 The Phosphor-Bronze Smelting Co., Ld., of Philadelphia, have issued a circular to the trade, in which they say: "We beg to advise you that we have moved the offices of the Phosphor-Brouze Smelting Co., Limited, to No. 512 Arch street, Philadelphia, and would request that hereafter all letters remittances, orders, &c., be sent to that address. In connection with our new offices we have opened a sales and show room, where we will be prepared to exhibit our various products and fill orders for Phosphor-Bronze Ingots, Castings, Wire, Wire Rope, Wire Cloth, Sheet and Roll Metal, Rolled Bolts, Drawn Rods, Sash Chains and Cords, Tubes, Plates, Brewer's Kettles, Cold Rolled Pump Rods and numerous articles manufactured from our superior alloys."

The demand for Nails is not active, but the tone of the market as regards price has not undergone any change, and we continue to quote 10d. to 60d. \$2.90 @ \$3 per keg net, according to size of order. Hermann Boker & Co., have in stock a

new Razor, which is styled "Gardner's Challenge 1880." The Razor, which is a handsome example of hollow grinding, is in every respect well finished, and will compare favorably with any hollow-ground Razor in the market. It is offered to the trade at \$12 per dozen, net.

John C. Jewett & Sons, Buffalo, N. Y. bave issued their 1851 illustrated catalogue and price list. They show a large assortment of House-furnishing Goods, including Refrigerators, Water Coolers and Filters, Bird Cages and Japanned Tinware. From their revised discounts, which we print below, a fair estimate of the extent and vari-

ety of their assortment will be obtained: DISCOUNT SHEET TO APPLY TO JOHN C. JEWETT & SONS' ILLUSTRATED CATALOGUE AND PRICE LIST, JANUARY, 1881.

Discount

,			Discount
4	Page.	Class.	per cent.
	4 to 13. Refrigerators	1	Post action
	14 to 17, Ice Chests		
8	18, Refrigerator Pans and Gal-	[A.	25
	vanized Pails	1	
	10. Ice f'itchers	1	
7	19 to 26, Water Coolers	13	
0	az Cooler Stands	f Alle	25
0	28 to 32, Water Filters		
5	33 to 66, Bird Cages, Japanned	. C.	333/3
9	28 to 32, Water Filters	. D.	25
0	70 to 72. " Wood	. 10.	25
0			-
	Brackets, Seed, &c	. F.	25
5	78 to 87. Toilet Ware		- 5
0	88, Slop Jars		
5	80, Slop Pails and Foot Baths		
2	go to or, Bathing Apparatus		
2	92 to 93, Cuspadores, Wash Bowis	-	
5	and Pitchers	G.	25
5	04. Crumb Brush s and Trays,		
	Register Fenders, &c		
3	73 to 7, Folice Water \$3, Slop Jars. \$6, Slop Pails and Foot Baths. 92 to 93 Bathing Apparatus. 92 to 93 Cuspadores, Wash Bowls and Pitchers. 94. Crumb Brush s and Trays, Register Fenders, &c. 95. Tumbler Drainers, Cake (Mosets and Tea Canisters.		
	95, Tumbler Drainers, Cake Closets and Tea Canisters		
	of to of, Japanned Tea Trays	. H.	25
2	og, Children's Table Trays	. J.	25
3	100, Copper, Tin and Nickel Te	EL.	~3
0	99, Children's Table Trays 100, Copper, Tin and Nickel Te Kettles	. K.	20
	too to tot. Colleg Puts	1	
1	102, Scoops, Universal 103, Dust Pan and Brush, Jelly Molds, Can Openers, Potato		
5	103, Dust Pan and Brush, Jelly		
-	Molds, Can Openers, Potato		
0	Mashers	1	
7	Mashers 104. Dover Egg Beaters, Grater,		
5	Pot Cleaners		
5	Pot Cleaners		
-	100, Ice Tongs, Coover's Measures		
3	107. Sifter and Dipper, the New		
	Fryer, Coal Tongs	T.	
- 1	108, Razor Streps	Lie	15
2	100, Rat and Mouse Traps	1	
1	rio, Lemon Squeezer, Knife		
-	Sharpeners, &c		
8	Sharpeners, &c		
: 1	Poole's Lemon Squeezers		
	112 to 113, Hand Fluters		
1	114, Cast Bake Pans 115, Wood Knife Boxes, Table		
1	115, Wood Knife Boxes, Table		
1	Mats, Lap Boards		
1	116, Carpet Sweepers		
	117 to 121, Sherwood's Goods	M.	20
1	122, Japanned Goods	N.	5
1	123, Moss Baskets		
1	124, Flower Vases, Hanging Bas-		
1	kets 125, Star Sieves, Corn Poppers,		
1	125, Star Sieves, Corn Poppers,	O.	net
1	126, Dish Covers, Cover Lifters,	-	AAL D
1	Aquariums		
1	127. Caskets, Silverine		
1	128, Friction Mats		
1	Aquariums		
1		· F.	33/3
1	130, Ice Cream Freezers (Favorite)	. R.	20
1	131 to 136, Iron Reservoir Vases.	. S.	20

The "Blue Book" is the title of the sixth Association, just issued under date of January, 1881; it is substantially bound and contains the names and financial rating of about 50,000 dealers in Metals, Hardware and about 50,000 dealers in Metals, Hardware and kindred interests. The objects of the association as stated in their circular, are:

"First, to prevent loss to its members by furnishing them prompt and reliable credit information; second, to protect prompt-paying and responsible dealers by restricting the credit of their unworthy, incompetent or dishonest competitors." The association has

"First, to prevent loss to its members by furnishing them prompt and reliable credit information; second, to protect prompt-paying and responsible dealers by restricting the credit of their unworthy, incompetent or dishonest competitors." The association has

offices in New York, Chicago, St. Louis and Cincinnati. The cost of membership is \$60 per annum.

ing, Pa., and No. 8t Reade street, New York, have just issued an illustrated catalogue and price list of Hardware, exclusive of Locks. manufactured by them. The book contains 340 pages, and is printed on heavy paper in good clear type. The illustrations are all first class and the book is bound in a substantial cloth cover. We print below their revised discounts under date of the 15th instant, and which are subject in addition to their usual discount for cash in 30 days.

NO. I DISCOUNT SHEET FOR READING HARDWARE COMPANY'S NEW CATALOGUE OF 1831. January 1sth, 1881.

	oudday 15th,	10021
5	Page in 1831 Dis	scoun
		cent
0	1-4, Apple Parers	CCII
9		
-	'78 '76 Gem '72	
	per doz \$9.75 7.60 6.80 5.65	
	5. Measuring Faucets	
	5, Kitchen Grindstones	2 0
3	6 - Tohngao Cuttons	3730x2
	6, 7, Tobacco Cutters	44. 5
8	8, Coffee Mills.	+
S	8, Nut Cracks.	2581
3	9. Scale Weights	4
	9-11, Scales, Tea, Butchers' and Counter	
	12-15. " Standard and Steel-Bearing	
	16-19, Brackets, Store Shelf, Cottage & Rose	tto f
6	20-23, Flower-Pot Brackets	- 2
3	24, Butts, Meyer's	
I	24, " Parliament No. 12	
^	25. " Fast Joint Nos. 14 and 16	
	26. " Loose Joint Nos. 18 and 20	
		* * * 5
5	27, " No. 22	5
0	27.	5
	20, NO. 25	5
•	29, 30, NOS. 27 and 20	7
S	31, NO. 45	0
3	32, 33," Loose Pin Nos. 28 and 31	5
-	34, 35, " Nos. 22 and 22	5
	30. " NO. 21	6
2	37, " " NO. 25	. 6
8	38, 39," " Nos. 36 and 37	
	40, 41," " Nos. 38 and 4)	/
t	42, " Bronze Metal No. 60	*****
S	Topas Toint Nes 6- and	
3	43-45," Loose Joint Nos. 70, 65 and 75	0
	40: 47: AMSING SHULLER	0
2	48, Hinges, Gravity Blind	7
l.	48, "Harbster's Shutter	1 - 1 55
_ 1	49. Lun and Forter S	663
	16 Alexander Charten	

50, " 51, " 52, 53, " Shutter Catches...
" and Blind Fasteners...
Turnbuckles. Gate Hinges, New England and State 59, "Latches 61, Bolts, Tower, B. K., Barrel and Flat Shut er.
Bolts, Cased Shutter.
Spring, Square and Necked, and Sta

ples.
Bolts, Excelsior Shutter.
" Acme Shutter.
" Lever Foot.
" Spring Foot.
" Chain. 77, Boits, Squared and Barrel and Barrel as S, Boits, Flush. Sq. " Brass 91, " Mortise Door ... Brass ... Brass ... Brass ... Brass ... Bolts, Flat Cupboard and Straight ror, Cupboard Latches ... roz, Catches ...

Lever Cupboard Catches Ethow Catches Show Case Catches French Window Catches. 10, 111, Cupboard Turns.... Locks.... Screen Door Catches. 115, 110, 27, 25& 117, 118, Barn Door Latches. 25& 110, 120, Store Door Handles. 25& 120, 121, Thumb Latches, change list, Nos. 97, \$1.55; 102, \$1.70. \$1.70

ish Fasten 47, Ox Balls. 48, Barn Door Hangers, Nos. 3 to 8 and Nos. 15 48, Barn Door Hangers, Nos. 23 to 32. Rollers... Pulls.... Rail....

251, "Stays
252, 253, Hay Fork Fulleys
254, 255, Grindstone Fixtures
255, Friction Rollers
265, 257, Thimble Skeins and Pipe Boxes, Screw
Bolts and Wrenches
157, Wagon and Cart Boxes
58, Cabinet Makers' Shaves
58, Saw Clamps Melting Ladles and Hoisting Pulleys. ool/2... Porch Irons in Bulk, Nos. 4 and 5, per lb.,

Pump Fixtures and Spouts. 207, Foot Scrapers. 5
Sash Weights 269, Casters, Store Truck 4
273, Plate, Plano Forte, French, Bed

83-285, Pulley Beli Cranks, Bell Cranks, Check Springs, Bell Spikes The Reading Hardware Company, Read-

285, Fines, prings, Bell Spikes 287, Window Shade Racks Shade Brackets and Roller Ends Cork Pressers eaters
Boot Jacks and Foot Rests
Carpet Stretchers and Lamp Trimmers
Scissors and Shears
Cutting Nippers and Fliers
Tack Hammers
205, Soap Dishes
307, Sad Iron and Coffee Pot Stands
Polishing Irons
Sad Irons Sad Irons. 20&5
Fluting Irons. 50
Sad Irons and Stands, change list. 50

Cancelers 40& 24-131, Pen Racks, Paper Weights and Ink-stants 40& 32-399, Registers and Ventilators (Quoted by letter on application.)

We have received the following communication :

To the Editor of The Iron Age.—Dear Sir:—Will you yield a place in your columns for a word with the jobbers of stamped

It must be well known to them that the prevailing prices on this line of goods during several months past, have, to say the least, been far from remunerative to the manufacturers, and that they have been able by their address, and the pique or ambition or necessities of the manufacturer, and possibly through the representations of salesmen, to obtain lower figures than were warranted by the cost of the wares. The extreme low figures have been obtained, not by the general jobber, but by the few only, leaving a majority to pay more than a minority, a discrimination unavoidable, but most injurious to a large class of jobbers. The few who obtain the lowest prices sell their goods at figures with which the general jobber cannot compete. This is the bane of the business, and works great hardship to a large class of hard working business men, with perhaps, not too much capital, possibly not enough to enable them to buy as low as their neighbors. It must be well known to them that the

their neighbors.

The manuficturers of stimped wares have made several efforts to so combine as to prevent the possibility of such discrimi-nation against the general jobber, as well as for self-protection. But each effort has proved abortive because, primarily, of the money-power and ability of the large jobber. The needy or ambitious or jealous manu-facturer could not withstand his tempting facturer could not withstand his tempting offers, and so every arrangement has been trampled in the dust, to the great injury, I unhesitatingly declare, of the larger number of jobbers as well as the retailers, large or small. So the matter stands to-day. No one can sell stamped wares at competing prices and make a profit. So it will remain until some arrangement is perfected by which each jobber is enabled to kuy at bottom price, whatever that is, and to sell as low as another. Such an arrangement tom price, whatever that is, and to sell as low as another. Such an arrangement should be the aim and ambition of fully nine-tenths of the jobbers of stamped wares in the United States. Will they second the manufacturers in a new effort to equalize prices? Or will they, as heretofore, antago-nize every attempt in this direction and use every means known to them to destroy or neutralize such a move?

192, Sliding Door Stops, Rail and Shut. Sheaves. 55
193, "Sheaves. 194-197, Pulleys, Screw, Incased, Side, Upright, Ceiting and Swivel. 194-197, Pulleys, Screw, Incased, Side, Upright, Ceiting and Swivel. 194-197, Pulleys, Screw, Incased, Side, Upright, Ceiting and Swivel. 194-197, Pulleys, Clothes Line. 66
202, 239, Pulleys, Clothes Line. 66
204-218, "Frame and Axle. 39
219, Rollers, Sash and Organ. 49
220, Sash Locks and Props. 45
221, Flush Rings. 66
222, Sash Locks and Springs. 45
221, Flush Rings. 66
222, Sash Cord trons and Stubs and Plates. 236
222, Sash Cord trons and Stubs and Plates. 236
222, Sash Cord trons and Stubs and Plates. 236
222-234, Shutter Screws, Lifts and Sash Centers. 49
236, 227, Drawer, Ficture and Shutter Knobs. 46
238, Shutter or Sash Knobs. 25
239-234, Sash Lifts. 49
230-234, Sash Lifts. 49
230-234, Sash Lifts. 49
230-234, Sash Lifts. 49
230-235, Sash Lifts. 49
230-235, Sash Lifts. 49
230-235, Sash Lifts. 49
230-235, Sash Lifts. 49
230-245, Sash Lifts. 49
230-246, Sash Lifts. 49
230-247, Sash Lifts. 49
230-248, Sash L decline to buy of those who remain out of the arrangement because they hope to make more money that way; that is, if he shall buy his goods of the associated manufactur-ers, and thus offer no encouragement to the in a brief period a large fraction would be added to the reserved per cent, for the jobber, making the reservation reasonably sat-isfactory. If there shall be union and sup-port by the jobber and retailer, their reasonable wants will be met. With such har-mony between the manufacturers and dealers the jobbers will find more protection and more profit than in any other way possible. The reservation for jobbers at present resolved upon is well understood by the members of the association to be too small, but, in the uncertainty of the jobbers' co-operation, it is all that can be adopted as a start-

ing point.

Now let the jobber affiliate closely with the association. Let him assert his resolu-tion to stand with it for the good of all, and then with this fact established, let the jobber claim as a right the per cent. reserva-tion properly due to him. The jobber can in this manner largely control the legislalation of the association. He become fact, an interested party and can speak for himself. Whatever he can reasonably want can in this manner be obtained. This will insure a healthy condition of trade and a

having in view the utilization of these sug-

The writer has had grave doubts hereto-The writer has had grave doubts heretofore as to the practicability of any of the
propositions for arrangements, because they
have left the jobber no proper footing to
stand upon, and has steadily opposed them.
The proposed new deal looks practical. He
is acquainted with most of the manufacturers and all the executive committee, and is nfident that this theory of protection to the jobbers can be fully carried out.

The jobbers should not let this opportunity ass, but instead, as one man, throw the eight of their influence in its favor. We pass, but instead, as one man, throw weight of their influence in its favor. shall thus protect ourselves.

January 15th, 1881. JOBBER.

BRITISH IRON MARKET.

[Special Report by Cable to The Iron Age.] LONDON, Wednesday, January 19, 1881.

Scotch Pig.-Prices have been irregular during the week, fluctuating in both directions, but closing steady, with a large business doing. The following are maker's Gartsherrie

 Coltness
 64/

 Glengarnock
 59/
 Manufactured Iron.-There is a steady demand, with a fair business doing. Prices are steady. Best Staffordshire Bars, £7 @

Steel Rails-A large business has been done under an increasing demand, and prices are firmer. Ordinary Sections are quoted £6. 5/@ £6. 15/.

Iron Rails.-There has been a heavy demand during the week, with large transactions and stronger prices. We'sh are quoted £5 @ £5. 10/.

Old Ralls-The brisk demand continues and a further advance of 10/ is reported in Old Ts. which are now quoted at £4. 7/6.

Scrap-Is quiet, the offerings being light, with fair sales. Wrought is firmer-quoted at £3. 10/.

IRON.

American Pig .- The tone of the Iron market this week is firm and the inquiry active, with considerable business transpir-We quote Foundry No. 1, \$25; Foundry No. 2 X, \$22; Gray Forge, \$20 @ \$21.

Scotch Pig .- Sales of Scotch Iron during the week aggregate about 1,000 tons various brands; the arrivals during the same period were light. Ocean freights have advanced to 5/ @ 7/6, and partly on this account, and partly in sympathy with the firm tone of the English market, holders ask from 50 cents to \$1 per ton advance on last week's quotations. We quote Eglinton, \$22 @ \$22.50; Carnbroe, \$22.50; Coltness, \$24.50 @ \$25; Glengarnock and Gartsherrie, \$23.50 @ \$24.

The demand for Foreign Bessemer Iron is active, and within a few days sales amounting to 30,000 tons are reported, at \$26.50@ 27.50, laid down here.

Rails.-For Steel Rails the inquiry is very active, and we hear of some heavy con-tracts pending, which, it is expected, will be placed in a day or so. Sales of American Steel are reported aggregating 20,000 tons, the terms of which have not transpired. In Iron Rails no new business has come to our notice. We quote: Steel, at mill, \$57.50@ \$62.50; and Iron Rails, \$46 @ \$49.

Old Rails.-The transactions in Old Rails have been very heavy during the week, and holders are asking \$1 @ \$2 per ton over the figures they would willingly have accepted not many days since. Among the sales reported are 1700 tons D. H. to a Pittsburgh consumer at \$30, ex store—terms, spot cash: 1500 tons Ts (American), at \$30; and 500 tons Ts, ex store, at \$28.25. We quote \$29 @ \$31 for Ts and D. H. respectively.

Scrap.—The only business that has come on during the week was in small lots. The tone of the market, however, is owing to the snow and ice in the streets. strong, and selected No. 1 Wrought, from yard, is quoted \$30 @ \$31.

Copper.—The market here during the reek under review has been tolerably firm, some more activity being displayed, leading to sales of 200,000 lbs. Lake Superior at 1914, on the spot, the asking price toward the close being 1934. For Baltimore 1854 is asked. London reports no further change per cable, Chili bars being worth £62. 10/and Best Selected £68. The English annual and Best Selected £08. The English annual reviews, just to hand, make no mention either of Spain's exuberant production or of the cessation of shipments hence to Europe, two rather important factors. "London, two rather important factors. "London Jan. 8, 1881.—The improvement which oc curred in prices last week has been maintained, and a fair business has been transacted. The price of Chili Bars on Monday advanced from £62. 15/ to £63. 5/, but has since been rather fluctuating, and down to £62 since been rather fluctuating, and down to 202 accepted. The better tone probably arises from the more favorable statistics which were published on the 1st inst., the total visible stock having been reduced to 60,610 tons, against 62,229 tons on the 1st of December, and 62,140 tons on the 1st of January. It is also interesting to note that the stock It is also interesting to note that the stock is less than upon the first of any month last year. To commence the new year the visible stock was 1530 tons less than that with which last year opened, while the price of Bars was £4 per ton less." Manufactures remain was £4 per ton tess." Manufactures remain as under: Bottoms, 31¢; Braziers, accord-ing to size, 28¢ @ 34¢; Circles, 31¢ @ 34¢; Segment Sheets, 31¢; Fire-box Sheets, 25¢; Sheathing, 26¢; and Bolt Copper, 28¢.

Tin .- Our market has ruled very quiet at somewhat lower prices, due entirely to speculative causes. Meanwhile no import-ant lots have changed hands. London

accord with its principles and theory of cables Straits Tin £89, and Singspore \$28.25 action, or write for any desired information per picul. To the United States no shiphaving in view the utilization of these sugments of Tin have been made from the Straits settlements during the first half of this month, while to London the export has been 700 tons. The shipments from the Straits to England, as shown above, are heavy, and shipments have also been made to Europe from here; hence there would rather have been cause for an improvement in this market, instead of which, following the London tendency, it droops. We quote at the close, large lines: Straits, 19%¢ @ 20¢, and Australian, 19%¢. The monthly and annual statistics from Europe have made their appearance. "London, January 8, 1881.—The statistics published on the 31st ult. were not so satisfactory as those issued at the end of November, the visible stock having increased to 13,584 tons, against 12,986 tons on the 30th November last, and 14,833 tons on the 31st December, 1879. The opening price for this year was £91, the same as that quoted at the beginning of 1880, while the stock is 1249 tons less, so there seems little doubt that at least a similar advance to that which took place last year will be again effected. The deliveries in London and Ho'land during December were not so good as in November, being 1541 tons against 2120 tons. The shipments from Straits last month were 750 tons and from Australia 900 tons. The total shipments from Straits and Australia last year were 10,703 tons, against 10,986 tons in 1879, and the total deliveries in London and Holland in 1880 were 20,751 tons, against 21,250 tons in the previous year. A sale is just announced for the 25th inst. at Rotterdam of 18,200 slabs Banca and 4800 slabs Billiton." Tin Plates have remained quiet; the demand is moderate and the supply ample. We quote at the close, large lines, ordinary brands, per box: Charcoal Bright, \$5.87½ @ \$6.25; do. Ternes, \$5.25 @ 5.37½; Coke Tin, \$4.90 @ \$5, and do. Ternes, \$4.87½. At Liverpool the market retains its firmness. The meeting of Welsh makers alluded to in our previous report has effected. alluded to in our previous report has effected nothing, and Coke Tin closed at 15/.

Lead.—This metal has relapsed into quietude, sales being of little importance for the week, but prices remain steady at \$4.90 @ \$5. Refined is very firm at 51/4 ¢ @ 51/4 ¢. "London, Jan. 8, 1881.—There is hardly any change to be reported in the state of this market, the demand continuing rather quiet, but prices have been steadily upheld for all descriptions." Manufactures are quoted as follows: Sheet Lead, 7¢; Lead Pipe, 6½¢; Tin-lined ditto, 15¢, and Block Tin Pipe 40¢. Tin Pipe, 40%.

Spelter and Zinc.-Since we last report-Spelter and Zinc.—Since we last reported Common Domestic Spelter has persevered in its attitude of great firmness, and is worth 5\(\psi\epsilon\), with moderate dealings, while in Silesian nothing has transpired, being held at 5\(\psi\epsilon\), \(\epsilon\), the inundations in Silesia have much to do with the advance in Spelter at Breslau. "London, Jan. 8, 1381—The sudden rise which took place in this metal at the end of last week has not only been at the end of last week has not only been maintained, but prices for Silesian have further advanced, while English Hard has also been quoted at improved rates. The tone appears good, and higher prices are

Antimeny — Has remained moderately active at 151/2¢ for the Cookson brand, and 1434¢ the remaining ones.

COAL.

Trade at the present moment may be said to be very brisk on a small scale. Work has been going on only half the time, and the roads, by reason of snow and ice, apthe roads, by reason of snow and ice, appear to be sending down only about half the quantity of Coal that they would usually haul in a given time. Some Coal men estimate that the amount coming to tide-water is about one-quarter of the capacity of the mines. The weather is cold, yards in the city are short of Coal and the local demand for Coal is very brisk, so that the circular for Coal is very brisk, so that the circular rates are very nearly obtained. This little tempest in a tea-pot makes the trade feel brisk, and it is confidently reported that there will be a large demand and good prices all through 1881. While the shipping points are now clear of ice, there is more or less difficulty reported in the harbor from the ice coming down the Hudon and filling. ice coming down the Hudson and filling slips and giving trouble generally, making it difficult to get Coal. In the city trade there is no little delay in delivering Coal.

The line trade is taking all the larger sizes of Coal, and it has been reported that in some of the inland towns the yards are hare, and actually in want. On this ac-count, and because of the local demand, there has been much talk in regard to going to work full time, and an attempt was made to induce the companies to do so. This afternoon Mr. Hoyt, of the Pennsylvania Coal Company, said, in reply to a question, that work would be full time this week, and that next week half time would be resumed. He looked upon the idea of a short supply as altogether ludicrous when there were round 500,000 tons in stock. The real difficulty in 500,000 tons in stock. The real difficulty in obtaining Coal and the apparent scarcity are, he said, incident to cold weather and an unusual quantity of snow.

Full-time work for a week will prebably have little or no effect upon the market. Prices are unchanged, and are reported as about at the circular rates: Lump Lehigh, \$5.25 @ \$5.40; Lump and Broken of other kinds, \$4: Egg, \$4.20 @ \$4.40; Stove, \$4.45, and Chestnut scarce and hardly quotable. Freights are high on account of the delay in getting loaded.

OLD METALS, PAPER STOCK, &c.

The purchasing prices offered by dealers are as follows:

	Copper, heavy	b.	80.16	a	\$0.17
	Copper Bottoms	8.0	.14	0	.1456
	Yellow Metal	6.5	.00	0	.0016
	Brass, heavy	6.0	.11	6	.13
	Brass, light	8.5	.00	0	.00 1/4
	Composition, heavy	6.6	.1316		.141/2
	Lead, heavy	66	.0434		.0436
	Tea Lead	6.0	.031/2		.033/4
	Zinc	6.6	.031/2		.0354
	Pewter, No. 1	6.6	.13	60	.13
	Pewter, No 2	6.6	.08	8	.00
	Wrought Iron	ton	22.00	a	23.00
	Light do	0.0	10.00	0	
	Stove Plate	66	12.00	-	****
	Machinery do	66	16.00	0	13.00
	Grate Bars	46		0	17.00
à	OTRIC Days		8.00	0	0,00

	The prices current for Ra	ags, &c., are as
	Canvas, Linen	" 2½c. @ " 4½c. @ 4½c.
	No. 2. Seconds Soft Woolens. Mixed Rags	11/3c. @ 11/4c. 11/3c. @ 11/4c. 11/3c. @ 11/3c.
	Gunny Bagging Jute Butts Kentucky Bagging Book Stock	14 c. 6 3 c. 14 24 c. 6 3 c. 14 3c. 6
1	Newspapers Waste Paper and Scraps Kentucky Bale Rope	" 1½c @ 1½c. " ½c. @ ¾c. " 4c. @

EXPORTS

Ot Handmann, Iron, Machinery, Metals, the

-	Of Haraware,	LTON	, machinery, m	C. 2-CR
)	&c., from the	Port	of New York, f	or t
í	1			
*	Week ending J	OF 16 SEC	ry 10, 1001;	
	Danish West Inc	lies.	Quan	V
			Ag. imp.,pkgs 156	
	Quan.	Val.	Mach'y, pkgs. 16	1,6
	Coal, tons 305	1,224	Lamp gds.,pgs 9:	
,	Glassw're, cs. 19	103	Rosin, bbls 10	
ı	Hdw., cs 8	104		
	Nails, cs 6	51	Cuba.	
	Blocks, pkge. z	44	Mach'y, pkgs. 121	23.6
	Petlm., gals5610	728	Iron, pkgs 388	6
	Silverware, cs 3	54	Sew. ma., cs 13	
	Cars	99	Mf. iron, pkgs. ar	2
	Ag. imp.,pkgs 21	49	Hdw., cs 102	2,7
1	Nuts, bbls	33	Coal, tons 15	
ı	Iron safe 1	105	Glassw'e, cs 17	4
	Sp. turp., gal 100	50	Ag. imp., pkga. a	3
	Dutch West Ind	Man	Ptim., gals7,513	9
			Wire, spools . 60	5
	Ptlm., gals. 390,625 4	8,408	R. R. mtl., pgs 6	1
	Dutch East Indi	ies.	Ammu'tion, cs. z	1
	Dia ma nas	88	Salonica.	
d	Ptg. ma.,pgs. a Roofing, cs 4	46	Ptlm., gals. 155,000	18.0
d	Stoves, cs 1			
	Tinware, cs 2	53	Porto Rico	0
ı	Ptim., gals 617	74	Change of	
9	Hdw., cs 4	79	Glassw'e, cs. 77	3
١	Pitdware, cs. a	90	Mach'y, pkgs. 2	3
١	Ptg. ma.,pkgs 3	38	Rosin, bbls 27	
1	reg. mm.,page 3	30	Ag. imp., pkgs 10	8
1	Hamburg.		Nails, kegs 10	
	Sew. ma., cs., 180 (807	Carriages 3	8
1	Ag. imp. pkgs 274		Sew. ma., cs., r	7 70

Ag. imp., pkgs 274 6, 182 Hdw., cs..... 22 1, 172 Lub. oil, bbls. 275 4,075 Mach'y, cs.... 37 3,844 Clocks, bxs... 64 1, 129 Telephones, cs. 1 40 Mf. iron, pgs. Hdw., cs..... Iron, pkgs.... Lisbon. Ptlm., gals.204,800 25,090 gals.138,949 13,600 es, hhds 2 6 Rotterdam.

Cru'les, hhds 2 62 Pumps, pkgs. 6 244 Clocks, bxs.. 136 1,300 Mf. iron, pkgs 38 504 Ptlm., gals 466, 301 43,000 Lub. oil, bbls. 350 8,616 Hdw., cs..... 3 165 Pumps, pkgs. 3 660 Pitdware, cs... 1 74 Naples. Rosin, bbls. 2632 6,20 United States of Co-lombia.

Ag. imp., pkge 1 Mach'y, cs... 8 Ptlm., gais 257,500 9 Hdw., cs... 23 Mf. iron., pkgs 8 Clocks, cs... 4 Hdw., cs... 9 470 405 130 175 Liverpool. Coal, tons. Cutlery, cs... Wire, spools. Photo mti., cs Pumps... Machy., pgs... Nails, bxs... Clocks, cs... Carts... Cars... Rosin, bbis... Tel. matls., cs Wire, bbls....

Hayti.

Fenerucia.

dfrica.

Mexico.

China.

British West Indies.

Nails, kegs... 142
Hdw., cs... 35
Tinware, pkg 5
Nuts, pkgs... 8
Blocks, pkgs... 1
Ca'ge mt., pgs 8
Carriages.... 9
Ptlm., gals... 24,940
Hoops... 10,000

Ptim., gals. 38,500

Hdw. cs. Mach'y, pkgs. L'mp g'ds, pgs Zinc, cs.

Ildw., cs. Mf. iron, pkgs Car mtl., pgs. Rosin, bbls...

439 1,348 31

169

517 180

1,577

Br

Mdse., pkge., r

Arms, cs., 27 Mdse., cs., 6 exander & Sons, Rifles, bxs., 3 uermann, Wm.

Order,
Gun barrels, cs., 4
Gun barrels, cs., 4
Emery stone, ton

Cases, 5 Packages, 43

Remington & Son,

Iron.

Bundles, 298 own Bros. & Co. Wire, rings, 3214 Bars, 2151 Swedish rough bars,

Temple & Lockwood, Wire, lots, 269 Dieckheroff, Raffleer & Bros. Plates, cs., 11

Heuermann, Wm. Machy, cs., 25

Cardiff. Mach'y, cs... 480

Hull. Cutiery, cs... Iron, pkgs... Carbines, cs... Nails, kegs... Hdw., cs.... Clocks, bxs... 30 London. Ptlm., gals. 904,865 88,021 Guns, cs 100 Hdw., cs 24 Plumb, mt., pgs 7 Tin, slabs ... 1078 Lub. oil, bbls. 225 Glassw'e, cs... Machy., pgs... Ag. imp., pkgs Copper, case. Nails, bxs.... Pumps, pkgs.. Glassw're, cs. 12 Ptlm., gals...11,900 Mach'y, cs... 4 Nails, kegs... 50 Scales

Glasgow. Hdw., cs..... 10 Ag.imp., pkgs 32 Mach'y, cs... 7 Copper, cs... 9 Spokes, cs... 4 Clocks, pgs... 12 2,260 Mf. iron, pkgs 8 894 Car mti., pgs. 6 1,759 Rosin, bbis... 62 100 Carriage.... 1 765 Sew. ma., cs... 21 Bristol.

British North Amer ican Colonies. Coal, tons ... 225 Rosin, bbis... 20 British Guiana. Ptlm., gals, 23,000 2,875

ron, pkgs.... 17 Quicksi'r,fiks. 200 Revolvers, cs. 2 Nails, kegs... 26 Glassw'e, pkgs 71 Pistols, cs... 2 Nails, bxs... 4 British Honduras. Ptlm., gals...1,755 Hoops, bdls.. 125 Hoops, bdls. : Glassw'e, cs. . Nails, kegs. . Hdw. cs. . . . Sew. ma., cs. . Clocks, bxs. . Sew. ma., cs. . Cutiery, cs. . . Ag. imp., pkgs Tel. mtls., pgs Mf. iron, pkgs Gas fixt., cs. . w. ma., cs. Marseilles. Tacks, cs..... Cartridges, cs Crucib's, hhds. 7 220 Mechol, bbls. 913 16,300 Brasil.

Ptlm., gals.19.978 Tinware, cs. 7 Mf. iron, pkgs 10 Bilbao. Ptlm., gals. 152,300 10,000 Havre. Sew. ma., cs. 51 600 Machinery, cs 16 1,365 Ag. imp., pkgs 58 2,884 Rosin, keg... 1 22 Hdw., cs..... 3 Mf. iron, pkgs 3 Mf. iron, cs... r Nails, kegs.... 209 Petlm., gals.50,000 kosin, bbls... 290 Clocks, bxs... 24 Brass tubes,cs 7 Coal, tons... 638 Cadiz. Hdw., cs..... 55 1,110 Ptim., gals..20,000 2,400

Seville. Ptlm., gals:61,354 14,046 Beyrouth, Ptlm., gals.141,000 16,577 French West Indies. Carriages.... 5 1,230 Ptlm., gals...3500 453 Car. mtl.,pkg8 17 380 Hdw. cs.... 3 160 Sew. ma., cs... 3 120

Argentine Republic. Ptlm., gals...20,000 2,450 Clocks, bxs... 34 572 Hdw., pkgs... 194 4,441 Blocks, pkgs... 3 472 Car mtl., pgs.. zz 665

IMPORTS

Of Hardware, Iron, Steel and Metals into the Port of New York, for the Week ending January 18, 1881:

Richard Irwin & Co,
Pig, tons, 200
Prosser, Thos., & Sons,
Tire forgings, 8
Plates, 18
Drexel, Morgan & Co.
Ore, tons, 5176
Frasse & Co.
Wire, cks., 2
Elliott, Sons & Co.
Ore, tons, 450 Hardware. Hardware.
Yule, G.
Machy., cs., 5
Selby, Samuel,
Machy., cs., 11
Mount, Jas. T.
Hdw., cks., 5
Rosenthal & Co., J.
Cask, 1
Cases, 6
Lathwe & Leffries Latham & Jeffries, Ore, tons, 450 Perkins & Choate, Tons, 200 Nevada Bank of San Francisco, Cases, 4
Windmuller, Louis,
Gun barrels, case, 1
Wite & Bro., J. G.
Irish harps, cs., 7
Wiebusch & Hilger
Hdw. Co.
Cutlery & hardware,
pkgs., 29 Cutlery & ho pkgs., 29 Boker, H. & Co.

Francisco,
Old rails, pcs, 2114
Pig, tons, 200
Lee & Co., James,
Pig, tons, 200
Baring Bros. & Co.
Pig, tons, 200
Alexander, F. & Son,
Bars, 2100
Robertson, James,
Galvanized, cs, 22
Strous, W. L.
Iron, bdls., 586
Wall, J. P.
Wire rods, bdls., 216
Dolge, Alfred,
Wire, cs., 21
Henderson Bros.
Pig, tons, 100 Boker, H. & Co.
Casks, 5
Cases, 12
Horse Nail Co.
Mdse., pkgs., 5
Betzmaur, C. L.
Guns, case, x
Bloomfield, J. C. & Co.
Machy., cs., 12
Dowing & Lawrence,
Chain, x
Loow, Edgar,
Case, x
Pratt & Farmer,
Case, x Henderson Bros.
Pig, tons, 100
Cary & Moen,
Wire reds, bdls., 645
Lundberg, G.
Bars, 1875
Bundles, 483
Keller, L. H. & Co.
Wire, case, 1
Milliken & Smith,
Wire rods, bdls, 703
Coddington & Co., T. B.
Sheet iron, bdls, 139
Order. Pratt & Farmer,
Case, 1
Strasburger & Co.
Packages, 6
Sellers, W. B.
Cutlery, cs., 2
Schuyler & Duane,
Guns, cs., 6
Sanderson & Son.
Ship's shaft, 1
Dupham, Buckley & Co.
Cases, 3
Winchester Arms Co.
Cases, 51 Order, Ironware, pkgs., 7

Anvils, 55 Old iron, tons, 330 Wire rods, pgs., 8824 Bundles, 6a Pig, tons, 858 Flange rails, 3328 Double-headed rails, Cases, 51 Clark Thread Co. Machy, cases, 60 Bruckmann & Lor-bacher, Keg rings, box, r egson, McCulloch & Co. Machy, cs., 16 Machy, John, Specular iron, kilos., 251.342½ Spiegel iron, tons, Thompson, Jo Case, 1 Ward, Asline, Mangnese iron, cks., Cutlery, cs., 4 Hartley & Graham Hartley & Graham,
Arms, cs., 4
Mdse., pkgs., 5
Dowing, Sheldon & Co.
Cask, 1
Merchants' Dis. Co.
Mdse., pkgs., 8
Guns, 0s., 3
Arms, cs., 2
Curley & Bro., J.
Cuttery, pkgs., 5
Hilger, Ernest
Scythes, cask, x
Bales, 14
Drexel, Morgan & Co.
Cases, 10
Depo, James,
Cuttery, case, 1
Folsom, H. & D.
Mdse, cs., 7
Arms, cs., 2
Gardiner, Mr.
Mch., case, 1
A. Field & Son,
Casks, 15
Casks, 15
Casks, 15
Casks, 15
Casks, 15 Ore, tons, 1667 Wire rods, bdls., 2142 Rails, pcs., 2286

The

Steel. Brown Bros. & Co.
Wire, rings, 92
Packages, 332
Rods, coils, 785
Baring Bros. & Co.
Wire rods, coils, 642 Rail crops, 250 James Lee & Co. Blooms, 1483 James Lee & Co.
Blooms, 1483
Brown, Wm.
Bundles, 158
Meyer, House & Co.
Casks, 58
Jere. Abbott,
Cases, 14
Naylor & Co.
Rods, bdls., 72
Drexel, Morgan & Co.
Steelware, cs., 7
Cary & Moen,
Bunale, 1
Grant Locomotive Co.
Springs, 20
Sanderson Geo.
Casks, 4 A. Field & Son,
Casks, 15
Cases, 19
Hoes, cks., 27
Nails, kegs, 2
Vises, cask, 1
Chains, cks., 36
Anvils, 148
Mdse., pkgs., 35
Wire, cs., 2
Patterson Bros. & Co.
Mdse., cks., 2
Steiner Bros. & Patter500, Casks, 4 Woodford W. O. Bundles, 178 Bars, 24 Plates, 68 Cases, 13 Waterbury, L. & Sons, Steel pins, box, 1 Mason, S. W. & Co. Wire rope, colls, 9 Dolge, Alfred,

Steiner Bros. & Patterson,
and Mage., case, 1
McCoy & Saunders,
Rings, cks., 5
Mdse., cs., 5
Mauger & Petrie,
Machy, cs., 10
Degrauw, Aymar & Co.
Chains, 2
Chains, cask, 1
Hildick, A. H.
Chains, cks., 11
Visea, 20
Anvils, 50
Cases, 5
Hammers, cask, 1
Moore's Sons, J. P. Wire rope, or Dolge, Alfred, Wire, cask, x Moss, F. W. Bundles, 150 Bars, 31 Balk & Manson, Prosser, Thos. & Sons, Bands, 171 Bars, 92 Bundles, 101 Order, Wire, galv'd, pkgs., Moore's Sons, J. P. Mdse., pkgs., 2 Armstrong & Sons, M. Cask, 1 Godfrey, Chas. Guns, cs., 3 Blooms, 3423
Tubes, 119
Old steel, tons, 83
Old railway leaf
spring, tons, 45
Wire, pkgs., 61

Godfrey, Chas.
Guns, cs., 3
Putney, Daniel,
Gun barrels, cs., 6
Carey, Samuel,
Milistones, 268
Livingstone, W. & F.
Millstones, 238
Grinding stones, 237;
Thompson, L. & Co.
Sew. mach., cs., 15
Robbins & Appleton,
Machy., case, 1
Schovering, Daly &
Gales,
Mdse., pkge., 1 Metals. Lamarche, H.
Sheet zinc, cks., 86
Sheet zinc, cs., 6
Semon, Bache & Co.
Tin plates, case, r
Dickinson, Van Duzen &

Dickinson, Van Dusen & Co.
Tin plates, bxs., 2co Cobble, E.
Brass wire, case, 1
Drexel, Morgan & Co.
Tin naid terne plates,
bxs., 701
Phelps, Dodge & Co.
Tin plates, bxs., 7348
Agostine, J.
Old copper, bxs., 9
Alexandre, F. & Sons,
Tin plates, cs., 20
Cort, N. L. & Co.
Tin plates, bxs., 488
U. S. Stamping Co.
Tin plates, bxs., 244
Agonts of the Bank of
Montreal,
Tin plates, bxs., 23
Merchants Dispatch Co.
Tin plates, bxs., 33
Merchants Dispatch Co.
Tin plates, bxs., 37
Byrne, Jos. & Co.
Tin plates, bxs., 37
Byrne, Jos. & Co.
Tin plates, bxs., 1760
Windmuller & Roelker,
Zinc, cts., 100
Order,
Tin plates, bxs., 17,
246
Tin, ingots, 600

Tin, ingots, 600 Tin, slabs, 240

PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St., Philadelphia, Jan. 18, 1881.

Pig Iron.-The market is steady, and ith more activity in finished Iron holders of raw material are showing a strong front. A very fair business has been done in Foundry Irons for Eastern delivery, and some claim to be asking more money, but under ordinary circumstances \$25 may still be regarded as a fair quotation for No. 1. Specially favorite brands command a dollar more, but others again may occasionally be had at as much less, so that, as a matter of had at as much less, so that, as a matter of fact, prices are about where they were two or three weeks ago. The heavy production, as shown by the number of furnaces in blast, enables buyers to keep themselves well supplied with stock, and it is neither possible nor desirable to push prices much further. The market appears to have a healthier tone, however, and the

necessities of consumers has led to steady buying, and thus, in a measure, relieved any anxiety that may have been felt as to the immediate course of the market. There is very little of the speculative element mani-fested, and buying is done only in proportion to actual requirements. The outlook in this respect was never better than at present. Consumers in all branches of trade have an abundance of orders, so that the heavy output at furnaces is placed without much effort. We have not heard of any transactions calling for special remark, but a considerable amount of business has been done siderable amount of business has been done at \$18 @ \$18.50 for White Iron; \$19 @ \$19.50 for Mottled; \$20 @ \$21.50 for Gray Forge; \$22 @ \$22.50 for No. 2 Foundry, and \$24.50 @ \$25.50 for No. 1. Charcoal Iron has been sold at \$33.50 @ \$35 for Warm Blast, and \$36 @ \$38 for Cold Blast. Bessemer Iron is in active demand, and sales have been made to the extent of about have been made to the extent of about 30,000 tons at \$26.50 @ \$27. Holders now ask \$27.50, and at prices of last week a very ask \$27.50, and at prices of last week a very large business could be done at once. English Iron is wanted at \$17 @ \$18, but more money is asked, and sales of small lots have been made at \$19 @ \$20. Scotch Iron is quiet, but firm, at \$21.50 @ \$22 for Englinton, and \$25 @ \$25.50 fer Gartsberrie

Blooms.—The market is steady at former rices, and with a somewhat larger business doing at \$65 for Charcoal Blooms. Run-out Anthracite, \$55; Sunken Scrap Blooms and Northern Ore Blooms, \$45 @ \$50.

Muck Bars .- The market is quiet and steady at \$38 @ \$38.50, with sales of small lots at the outside rate. For large lots buyers are not disposed to pay more than \$38.

Structural Iron-Without much business Structural Iron—Without much business actually closed, the feeling among manufacturers seems to be stronger than during the early portion of the month. Inquiries are coming out very rapidly, and one or two good-sized orders for bridge work will probably be closed in a day or two. The demand from bridge builders is likely to be quite large, and as spring approaches the mills will probably have as much as they can attend to. During the past two weeks the apathy of buyers and the closing out of former contracts caused a dullness in shaped former contracts caused a dullness in shaped Iron, which appears now to be giving way to the usual activity. Prices are unchanged, but firm, at 2.6¢ for Angles; 2.9¢ for Beams and 3¢ @ 3.1¢ for Channels and Tees.

Bar Iron.—There is no change in this de-Bar Iron.—There is no change in this department; prices are fairly steady, and the demand moderately active. The complaint is more in regard to prices than anything else, but at the meeting of iron masters held yesterday, the card rate of 2.4¢ was reaffirmed. There is no scarcity of business, but the output at mills is so large that sallers are the output at mills is so large that sellers are constantly in the market, and when an order of any amount is offered, competition for it is very strong, although there is no apparent reason (if all were agreed) for Refined Bars being sold at less than 2.5\$. In the mean-time it is intimated that prices are shaded a little when the order is a specially desirable one, but as all the mills are now tolerably well supplied with work, more firmness in prices may be looked for. Car builders have been, and are still, heavy buyers, besides which the demand from small consumera through the stores is an important item. The general outlook is very satisfactory, and no change in prices is looked for in the immediate future, although the next movement will probably be toward higher figures.

Plate and Tank Iron.-A little more activity is noticeable, but there is nothing of special importance going on. The past week's business has probably been the heaviest of the month, but, as some of the mills were running short of work, buyers have been in a position to command con-cessions when their orders were of sufficient importance. The indications are favorable a more active business, and it is probable that prices may improve a little. An order for several hundred tons Ship Plate was taken a few days ago at a very low figure, but, as the circumstances were probably exceptional, we omit the quotation. We continue last week's rates which, however, are, as we have mentioned, not strictly adhered to. Tank Iron is quoted at 2.75¢ @ 2.87½¢; C. No. I, 3.3¢; C. H. No. I, 3.5¢; Flange Iron, 4¾¢ @ 5¢; Fire Box, 5¾¢ @ 6¢.

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Spil

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Seand

No. Car

\$45 ; Plate

@ \$2

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Sheet Iron.-Continues in fair demand. and we again hear of some pretty large orders being taken. Prices are a trific easier, however, and buyers of large lots have been in a position to command special rates for immediate orders. In a general way the market for retail lots may be considered steady, at about the following figures, viz.:

Steel Rails,-The market is steady and

firm, and in most cases sales have been made at a fractional advance on rates quoted a short time ago. We have not heard of any large transactions, although there are plenty of buyers both for Ameri-can and foreign Rails, at about current rates, if deliveries can be satisfactorily arranged. The firmness reported in foreign markets is strongly reflected here, and higher prices are not improbable, although the advance in the first place will have to come from abroad, as our manufacturers aim to keep prices down, so that imports will be on the ground of scarcity rather than for cheapness. About \$59 @ \$61 at mill is generally quoted, according to delivery, payments, &c. Sales of about 15,000 tons are reported at \$63 for delivery in Ohio and at St. Louis. Continental rails offered here to-day at \$61, c. i. f.

Steel Blooms,—There is an active demand, and if the Bessemer companies were

desirable orders. We are informed that the culty in obtaining cars. In down-river mar-demand from the West and Northwest is kets stocks are rapidly being reduced, and demand from the west and Northwest is likely to be very large. One mill in Illinois is said to have recently taken orders for about 25,000 tons, and there are other orders to come out soon. No recent sales of American Rails have been made in this mar-American Rais have been made in this harket, except in lots of small amount. For Southern delivery we hear of sales of foreign Rails at \$44 @ \$45, and other contracts are under negotiation. The outlook indicates an active business during the next

Old Rails.—The firmness noticed last week appears to have increased rather than otherwise, and sales have been made at a further advance on rates then quoted. A large business is said have been done, but large business is said have been done, but particulars cannot be obtained with any degree of certainty, as most of the lots sold were laid in New York. In this market 1000 tons of D. H.'s were sold at \$30 in store, and three or four lots of T's at \$28 @ \$28.25. Holders are now asking an advance, and it would be difficult to place an order within 500 \$20 ton of the above rates. order within 50¢ to the above rates. Stocks are nearly exhausted, and held by strong parties, but without a corresponding advance in new Rails it seems scarcely possible that consumers can respond to holders' views.

Steel Ends-Are offered at \$31, with

Scrap Iron—Is firm, sales of selected lots at \$29 @ \$30; some sold at still higher rates. Medium lots are held at \$27 @ \$28. rates. Medium lots are held at \$27 @ \$28. Cast at \$20 @ \$21, and Stove Plate at \$17. Market very firm.

PITTSBURGH.

Office of The Iron Age, 77 Fourth Avenue, PITTSBURGH, PA., Jan. 18, 1881.

PITTSBURGH, PA., Jan. 15, 1881.

Pig Iron,—The firmness noted in our last report continues, and as the market grows stronger the demand appears to increase. Consumers, who until quite recently have been holding off in anticipation of lower prices, are anxious to buy, particularly the property of the other prices. for forward deliveries, while on the other for forward deliveries, while on the other hand, sellers are less anxious to make additional sales. Coke Iron from native ores may be quoted at \$21 @ \$21.50, 4 mos., for Cold-short Forge; and \$22 @ \$22.50, 4 mos., for Neutral; Bituminous Coal and Coke Smelted from Lake ores, \$21 @ \$22 for Cold-short; \$22 @ \$23 for Neutral; \$23 @ \$24 for cinder mixture Red-short; and \$26 & \$26 for allowed by Foundry grades. \$27 for all-ore do. Foundry grades \$23.50 @ \$25.

Bessemer Iron—Is in active demand, with limited offerings, and prices are strong and tending upward. Sales at \$27 @ \$27.50 for round lots, and in a small way \$28 @ \$28.50. We are cognizant of the purchase of a lot of extra quality English at seaboard at equal to \$31, delivered in Pitts-burgh.

are destined to rule fully as high this year as last. While it is expected that the production of Lake Ores this year will exceed that of any former year, estimated by competent authorities at 2,225,000 tons, the consumption, it is also confidently expected, will be larger than ever before. It is calculated that it will require 1,300,000 tons to supply the steel works of the country, and if so, there will be but a comparatively small amount for general use. The stock of Oreon the dock at Cleveland is unusually light; it is said that it does not exceed 25,000 tons, and it is pretty certain to be exhausted and it is pretty certain to be exhausted before the resumption of navigation.

former quotations, \$2.85, 60 days, with the usual abatement of 10¢ per keg on car-load lots, and 2 per cent. off for cash.

Wrought Iron Pipe.-There is a fair No change in card business for the season. or discounts; the latter 65 to 67½ per cent.
Boiler Tubes remain unchanged at 40 off.
Oil Well Casing and Tubing 21¢ and 70¢ per foot, net.

Railway Supplies .- Steel Rails are still quoted strong, with the mill here sold way ahead. Old Iron Rails are in demand and hard to get; one of our largest consumers reports having been on the market for some time past and offering to buy at the prices asked, but unable to get any. Railway

Steel.—Best brands of Refined Cast Steel quoted at 111/2 ; do. Machinery Steel, 7¢ Bessemer and Open-hearth Machinery Steel 5¢; do. Spring, 5¢; do. Plow, 4¼¢.

Serap.—There is an increasing demand and the market is firmer, in sympathy with Pig Iron, although there has been no quota-Pig Iron, although there has been no quotable change in prices during the past week.

No. 1 Wrought, \$28 @ \$30 \$7 net ton;
Car Axles, \$38 @ \$40; Car Springs, \$42 @
\$45; Locomotive Tire, \$38 @ \$40; Boiler
Plate, \$32 @ \$34; Wrought Turnings, \$20
@ \$22; old Car Wheels, \$32 @ \$35, gross;
Cast Borings, \$16 @ \$17, gross.

Coke.—No change in prices: \$1.50 per ton, on cars at works; \$1.65 @ \$1.75 for small foundry orders.

of 50¢ to \$1 \$1 ton would be made to secure busy, and could do more but for the diffi- for Shapes. Nails are dull, and there is

Office of The Iron Age, Market and 8th Sts., Chattanooga, Jan. 17, 1881. General business is brisk as compared Southern delivery we hear of sales of foreign Rails at \$44 @ \$45, and other contracts are under negotiation. The outlook indicates an active business during the next three months, and somewhat higher prices are looked for. In the meantime, we quote \$46.50 @ \$47 for heavy and \$50 @ \$53 for light Rails. Market firm.

Spikes—Have been sold in large lots at about \$2.55, and, for small lots, the market may be considered firm at \$2.75.

Old Rails.—The firmness noticed last ing with hard freezing.

Pig Iron.—There has been nothing new worth mention in the Pig Iron trade for some time. There is no change in the situation, except a slow and steady improveation, except a slow and steady improve-ment in trade, which tends more especially to reduce the supply of higher grades. We quote: No. 1 Foundry, \$25 @ \$27; No. 2 Foundry, \$23 @ \$25; Gray Forge, \$20 @ \$22; White and Mottled, \$18 @ \$20; Car Wheel Metal, \$38 @ \$40.

Miscellaneous Articles. - There has been no material change in any articles in this list. We quote: Old Rails at \$26 @ \$28; Wrought Scrap, \$20 @ \$24; Cast, \$15 @ \$17; Old Wheels, \$28 @ \$30.

Ores.—We quote: 50 % Brown Hematite, per ton, \$2 @ \$2.75; Red Fossil, \$2 @ \$2.25. Nails—Are fairly steady at 3.25¢ rates, sual discount on 200-keg lots and for cash.

Manufactured Iron.—There is nothing new in the market. Bar rather stubbornly continues quiet, while Pig and Scraps are firm, and rather proportionally higher than any finished materials. We quote: Bar at \$2.35 rates; Railroad Spikes, \$3; Track Bolts, \$4; Trestle Bolts, \$4.50; Fish Plate,

Coal.—We quote Lump at 22¢ @ 25¢ per bushel, delivered. The cities south of the Tennessee Valley have again been for a week past seriously embarrassed on account of short supplies for household use.

Coke.-Furnace Coke, \$3 per ton at furace; Foundry, 10¢ @ 12¢ per bushel. Steel and Iron Rails .- We quote

Steel Bars at \$62.50 for American makes, \$60 for foreign. Iron, \$48 @ \$50; Small T

Lead.—We quote: Pig Lead, 41/2 @ 6 . Steel.—Plow Slabs, 3 in. and under, \$4.70; Black Diamond, ordinary sizes, 13¢.

CLEVELAND.

JANUARY 17.—Ores.—There is little new to say about the Ore market since our last. There is considerable inquiry for Ores for present delivery, and stocks unsold are becoming lessened week by week. Regarding prices of Ores for next season's delivery, would say that producers of strictly Bessemer Steel Ores show no disposition to reduce from last year's prices. On the contrary, they will hold firm for the same. As to Ores for general Iron purposes, it is a little too Ores.—There is no longer any room to doubt about the Ore market that Lake Ores for general Iron purposes, it is a little too are destined to rule fully as high this year as last. While it is expected that the production of Lake Ores this year will exceed that more easy to determine what the price will be on Will and Evander metals.

week:		
BESSEMER,		
Bessemer Speculars and Magnetics	10.00 @	\$10.00
Bessemer Hematites		9.00
Menominee Range Ores	7.50 @	9.00
MILL ORES.		
Speculars and Magnetics	8.00 @	10,00
	6.50 @	8.00
Fix Orea	9.00 @	10.00

BOSTON.

JANUARY 15.—The interesting feature of the Iron market has been the firmer tone of some forms of Manufactured Iron and the rising tendency of Old Rails and Wrought Scrap, without any corresponding improvement in the Pig metal. Any upward movement in Iron usually begins the other way, but Pig Iron is still only moderately active and prices show no change. We quote American Pig Iron at \$24 @ \$26 for No. I X; \$21 @ \$22.50 for No. 2 X, and \$20 @ \$22 for Gray Forge. These prices are f. o. b. at the port of ahead. Old Iron Kails are in demand and hard to get; one of our largest consumers reports having been on the market for some time past and offering to buy at the prices asked, but unable to get any. Railway Spikes firmer, with an increasing inquiry; we now quote at 2½¢, 30 days, for large lots and 3¢ in a jobbing way. Splice Bars are firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.55¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer, and may be quoted at 2.25¢@ 2.35¢ Spikes firmer fi of foreign Pig Iron are causing them to take the place, to some extent, of old Machinery Iron for foundry purposes. Old Rachinery Iron for foundry purposes. Old Rails have been marked up about \$2 a ton all round, as a result of a considerable speculative movement. Foreign Rails are now held #t \$30 @ \$31 for D. H.'s and \$28 @ \$29 for Tees. American Rails are held at \$32 @ \$33. It is certain, however, that these prices cannot be sustained unless a material improvement takes place in Manufactured Iron. A report comes to us from Philadelphia that the advance in Old Rails was the result of some kind of a combination. Manufactured from is meeting with a better inquiry, and Refined Bars are firm at \$2.25. The local mills will take no new orders at anything less than

some disposition on the part of sellers to cut prices again. The nominal quotation to the trade is \$2.90, but purchases can be made in some instances at \$2.85. The advancing tendency of Scrap Iron, however, seems to promise a stronger market for Nails. Cop-per continues slow of sale, but is firmly held at 19\(\frac{\psi}{\psi} \psi\$, spot, and 19\(\frac{\psi}{\psi} \psi\$ for February and March delivery. The recent large sales filled up some of the principal consumers, and it is believed that the companies still have Copper on hand unsold. There has been no change in the combination pribeen no change in the combination prices of Manufactured Copper. We quote: New Sheathing Copper, 26¢; Braziers', 28¢, and Bolts, 28¢; Bottoms, 31¢; American Yellow Sheathing Metal, 17¢ @ 18¢; Yellow Metal Bolts, 20¢; and English Yellow Metal Sheathing, 14¢, in bond. Lead.—The intimation in last week's Bulletin that this metal had touched bottom was speedily verified. Buyers have come in since our last and cleaned up all the low-priced lots, with the effect of sending quotations up to 5¢ a pound. Many operators, both here and in New York and St. Louis, intimate that they would rather sell than buy at to-day's rates, and say that the advance is due solely to the blowing up of the Lead works in New Jersey. But we know that 5¢ 🖓 lb was offered for several thousand tons of was offered for several thousand tons of Lead on Tuesday and refused. The prices of manufactures are unchanged, as follows: Bar, 6½¢; Pipe, 6½¢; Sheet, 7¢; Tin-lined Pipe, 15¢; Tin Pipe, 40¢; all less 10 ½ to the trade. No. I Solder, 11½¢. Spelter is firm at 5¼¢ for Western and 5¢ for Remelted. Retail lots command ½¢ @ ½¢ above these figures. Sheet Zine is quiet Remeited. Retail lots command 1/4 @ @ 1/4 & above these figures. Sheet Zinc is quiet at 7 & @ 7 1/4 & The is of 34¢ above these figures. Sheet Zinc is quiet at 7¢ @ 7¼¢. This is off again in sympathy with a decline in London, consequent upon advices of large shipments thither from the East Indies. Straits can be purchased at 20¢. Tin Plates have met with a little more inquiry from large buyers, but are without any material change.—Commercial Bulletin.

LOUISVILLE.

Messrs. GEO. H. HULL & Co., Com-Messrs. Gzo. H. Hull & Co., Commission Merchants, report to us as follows, under date of January 15: There has been no marked change in the market during the last week. The demand for Mill Irons has fallen off slightly and Foundry Irons are now looking up. Prices remain as per our last quotations, which are for cash, viz.:

FOUNDRY IRONS.
No. 1 Hanging Rock, Charcoal \$27.00 \(\text{(a)} \) 28.00 \(\text{(b)} \) 30.00 \(\text{No.} \) 25.00 \(\text{(d)} \) 30.00 \(\text{No.} \) 25.00 \(\text{(d)} \) 25.00 \(
MILL IRONS.
No. r Charcoal, Cold-short and Neutral No. r Stonecoal and Coke, Cold-short and Neutral No. z Stonecoal and Coke, Cold-short No. z Stonecoal and Coke, Cold-short

... 19.00 @ 20,00

W. B. BELKNAP & Co., Iron and Steel W. B. BELKNAP & Co., Iron and Steel Merchants, Nos. 113 and 115 Main street, report to us as follows, under date of January 15: Trade for the past week has been more active, but still finds itself restricted by snow and ice, which have bound us in now for several weeks. Arctic temperatures prevail far south of us, and reports from Western Tennessee and Mississippi are discouraging. Cold and wet, long continued, caused the loss of a large part of the cotton crop of those districts, and we Manufactured Iron.—The situation has all grades of Pig Iron increases daily.

Manufactured Iron.—The situation has all grades of Pig Iron increases daily. The strong advance in all kinds of Scrap Iron has induced the mills to go outside and buy Pig Iron to a considerable extent. It is self-evident that any further advance in the price of Old Rais will turn the tide of trade toward Pig Iron. Wheel makers continue to could still be placed at 2.15¢, or even 2.10¢. Sheet Iron, 3.70¢ @ 3.75¢ for No. 24; Skelp, 2.20¢ @ 2.30¢; Tank, 2.90¢ @ 3¢; Hoop, 3¢ @ 3.10¢.

Nails.—The market continues strong, Nails.—The market continues strong, increasing inquiry. Stocks are changed hands at prices ranging from \$30 to \$32 a ton.

ST. LOUIS.

Messrs. Hoffen, Plumb & Co., Pig Iron and Iron Ore Merchants, 477 Pine street, write us as follows, under date of January 15: The market has been quiet the past week, inquiries being less urgent. Prices remain nominally the same. Some brands are seeking market at low prices and with some urgency, owing, perhaps, more to the necessities of the makers than to the quality

	of the Iron, which is good :
	HOT BLAST CHARCOAL.
	Missouri, No. 1. \$26.00 @ 28.00 Southern, No. 1. 25.00 @ 26.00 Hanging Rock. 28.00 @ 30.00
	COKE AND COAL.
	Missouri 26.00 @ 27.00 Southern 24.00 @ 26.00 Ohio 24.00 @ 25.00
1	MILL IRONS.
-	Cold-short
1	CAR WHEEL IRON,
-	Missouri 30.00 @ 33.00 Southern 38.00 @ 40.00 Ohio 35.00 @ 45.00
-	ORE,
Commercial Sections of the local Division in	For fix, nominal

R. L. COLEMAN & BRO., Fourth and Pine R. L. COLEMAN & BRO., Fourth and Pine streets, St. Louis, write us as follows under date of January 15: Stock-taking and the cold weather have interfered somewhat with the demand the past week, but we note

FOUNDRY IRONS,
Hanging Rock Charcoal No. 1 \$29.00 @ 30.00 No. 2 28.00 @ 29.00 "Coke and Stonecoal
No. 1
No. 2. 24.00 @ 25.00 Southern Charcoal and Coke No. 1. 26.00 @ 27.00 Missouri "No. 1. 26.00 @ 27.00 Silver Gray. 22.50 @ 23.00
MILL IRONS.
No. 1 Cold-Short and Neutral. 22.50 @ 23.50 No. 1 Red-Short. 24.00 @ 25.00
CAR WHEEL AND MALLEABLE IRONS.
Hanging Rock Cold Blast

BALTIMORE.

W. N. WYETH, Iron and Steel Merchant, 46 and 48 South Charles street, reports us the following, under date of January 17 Trade rules about the same as last reported with prices firm: Ref. Bar Iron, 1 to 6 by 36 to 1 39 \$2.16 @ 23/6

" 1 to 41/2 by 11/4 to 2 18 1b 21/2 @ 23/46
14 to 2, Round
and Square 19 10 21/2 @ 23/4
Hoop Iron, 11/2 wide and upward " 31/2 @ 31/4
Band Iron, from 11/4 to 4 in, wide. " 2 @ 21/6
Horse-shoe Iron " 334 @ 4 ¢
Norway Nail Rods " 614 @ 614
Black Diamond Cast Steel " 131/2 @141/20
Machinery Steel " 9 @ 91/4
Cast Spring Steel " 8 @ 8%
Perkins' Horse shoes, & keg of 100 lbs\$4.37\%
Mule shoes
" Mule shoes 5.37 1/2
Date 10 9 8 7 6
Putnam Horse Nails 1 10 21 22 23 24 260
Globe Horse Nails 10 10 20 21 22 23 25¢
Railroad Spikes

R. C. HOFFMAN & Co., Iron and Commis sion Merchants, report the Pig Iron mar-ket as follows, under date of January 17: The Iron market continues firm, with a good demand for best brands. We quote:

Virginia	C. B.				
Anthracit	te No. 1		 	25.00 @	
6.6	No. 2				24.0
64	No. 3		 	20.00 @	21.0
4.6	Mottled			18.00 @	19.0
Charcoal	C. B. Bloo	oms	 	55.00 @	60,0

RICHMOND.

Mr. ASA SNYDER, Iron Merchant and Furnace Agent, writes as follows under date of January 17: Inquiries are numerous and the prospects promising. The market is firm at previous quotations, but sales confined to present needs:

Scotch Pig Iron\$24.00 @ 27.00	1
American Scotch Pig Iron 27.00 @ 29.00	1
No. 1 25.00 @ 28.00	3
No. 2 22,00 @ 25,00	1
	1
Mottled and White 19.00 @ 21.co	1
Virginia Charcoal C. B. Wheel Iron 38.00 @ 41.00	1
Old Rails 26.00 📆 28.00	
Old Wheels 28.00 @ 29.00	1
Wrought Scrap, No. 1 22.00 @ 25 00	1
Cast, Machinery Scrap 21.00 @ 22.00	ľ
Richmond Refined Bar Iron 234 @	ů
Horse Shoes, Tredegar 4.00	ľ
Mule " " 6 5.00	1
	П

CINCINNATI.

JANUARY 17.—Pig Iron.—The continued very cold weather has prevented many of the rolling mills and foundries in the West and South from resuming operations as early as usual in January, and the past week has been one of unusual quietness in the trade. Prices, however, are very firm and fully maintained at last week's quotations. Sales have been made at the following prices:

prices:	
No. 1 Hanging Rock Charcoal, Hot- Blast Foundry	\$26.00 @ 27.00
Foundry	23.00 @ 24.50
Cold Blast Charcoal Car Wheel Irons	38.00 @ 40.00 28.00 @ 33.00 2.15 @ 2.25

Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

> (From our Regular Correspondent.) LONDON, ENG., January 3, 1881.

in a position to state that their opinions are almost unanimously in favor of rising prices and an extended activity of trade. This feeling is per se of good omen, inasmuch as it leads all parties concerned to act with renewed vigor, and favors movements of pre-caution and, possibly, of speculation, which will naturally have the tendency of furtherwill naturally have the tendency of furthering the expected revival. It is possible, I think, to trace the influence of Glasgow in much of this hopefulness, but it is also pretty certain that the market is sound, and that certain that the market is sound, and that predictions has been reached. The speculators are, of course, highly elated with the reduction of stock shown by the Frosperity. with the reduction of stock shown by the Scotch ironmasters' returns for 1880, their fear having been that there would be an enormous increase instead of the decrease of 6000 tons actually set forth. At the same time, 739,000 tons in Scotland and above 250,000 tons in Clevelland, irrespective of the tonnage which those who are "in for a rise." There are already containly avists in other parts of the of crade from with which to commence another year's operations, and it requires a fair proportion of courage and buoyancy to face the prospect (coupling with it a current output far in excess of the production of any former period) and to feel assured of a content of the production of any former period) and to feel assured of a content of the production of the productio former period) and to feel assured of a continued and marked improvement. Such a feeling and disposition, nevertheless, undoubtedly exist, the first fruits thereof being already apparent in the shape of an extinction of the committee of the Ironmasters' Association. Coal.—Trade in this important interest, owing to the continued suspension of navigation, is quiet, so far as regards our river operators, but railway operators are very operators, but railway operators are very operators.

Take no new orders at anything less than a full supply of ores, cc., some of our largest that figure, and though the stores are selling at the same price, yet an advance is inevited market at Glasgow and a sharp advance, amounting to about 2/per ton, in the average number of furnaces in advance and most of them refusing orders at anything less than a full supply of ores, cc., some of our largest that figure, and though the stores are selling at the same price, yet an advance is increase of the following for an are to be market at Glasgow and a sharp advance, amounting to about 2/per ton, in the average number of furnaces in advance and most of them refusing orders are to be maintained. Norway and Swedish are to be maintained. Norway and Swedish are to be maintained. Norway and Swedish are to be maintained at \$4.15 for Bars and \$5.15 f. o. b. here:

it necessary to cover their old bargains, but its influence is widespread and its effects are as far reaching as though it had been caused by the most "legitimate" of reasons. The Cleveland market is following suit, and elsewhere throughout the iron-making centers the smelters are encouraged in their views, with a propost firmness in quotations. It with a prompt firmness in quotations. It may be that the change may not prove lasting, although the probabilities appear to rule in favor of further increments. There is certainly a general idea that business is certain to be good this year, and the pre-valence of the impression is almost sufficient to bring about the anticipated state of things. I think we must concede that the outlook possesses many strong features, and that any cool observer must be compelled to adopt optimistic views. With you matters seem optimistic views. With you matters seem to remain exceedingly good, and so far as our mail advices serve to show, you have the best of expectations for the spring trade. From many of our colonies reports are of a cheery tone, and some of the external markets—such as the West Indies, South America and the far East—are spoken of as being likely to yield a greater turnover than they have latterly shown. On the Continent matters have lately taken a most decided matters have lately taken a most decided turn, particularly in France, where the iron and steel works are reported to be remark-ably full of orders—some of them, indeed, being booked forward over the larger portion of this year. The Russian tariff, it is true, is not unlikely to prove an obstacle in the way of business with that empire, but, in the opinion of many well informed persons, it is believed that the Czar's subjects must still purchase their goods from external sources of supply, from sheer inability to manufacture themselves on a commercial scale and in a satisfactory manner. Otherwise Conti-nental prospects are bright, and minus any serious drawback in the shape of political differences, save in the relatively unimpor-tant cases of Turkey and Greece, which may well be left to settle their quarrel without causing any serious anxiety to the world at large. Turkey is a fair customer, but Greece is so utterly poor and insignificant a pretender to nationality that it is scarcely worth a second thought as a consuming market. At home, the condition of Ireland is certainly senome, the condition of Ireland is certainly serious, and the insecurity of property and its owners is largely putting a stop to purchases by the tradescien there. It would be impossible for the present lawlessness to continue, and there is every hope that the government will lose no time after the meeting of Parliament on January 6 in propounding their views as to the future and their ing their views as to the future and their remedies for the present state of affairs. Ireland is a good buyer of English manu-factures, especially Dublin, Belfast and Cork, and a few other large towns, but in cork, and a few other large towns, but in proportion to the size and population of the country it is by no means a large consumer. The poverty of the population of the West and Southwest, indeed, is so extreme and unmitigated that there is no money to spare, even for articles which are elsewhere counted among the common necessities of civilized existence. In other respects it is inclieved. existence. In other respects it is believed that the home trade has "got a turn," and that it is likely to show still further strength as the year grows older. The harvest money has been highly beneficial to the rural tradespeople, and they have put into circulation their receipts for the purpose of renewing their stocks, which are extremely low, even at the time being. I have the best of hopes in connection with the home market but I are howeld to the stocks. market, but I am bound to confess that I do not anticipate great things from it during the first half of the year, for the simple reason that I believe the agriculturists to have only partially recovered from the ef-fects of the disastrous losses which have fects of the disastrous losses which have for several years overtaken them. I should be glad to be found to be absolutely and entirely wrong, but as things stand I place the opinion on record, and leave the outcome to events. On the whole, then, I think we may assume that we have fairly, albeit not extravagantly, good prospects before us. It does not seem likely that we can rely upon our own consumers in the farming localities for a little time absad that we can rely upon our own consumers in the farming localities for a little time ahead, but with any pressure in the manufacturing towns there would speedily be a migration of labor thitherward which would denude the provinces of their surplus men, and so

THE NEW YEAR

opens auspiciously in almost the whole of the departments in which the readers of this journal are interested. The position at the moment is good, and there seems to be excellent reasons for assuming that prospects are sufficiently bright to warrant the expectation that an early upward movement will take effect. I have mixed a good deal among "iron men" during the holiday season which is now about at an end, and I am in a position to state that their opinions are y seastocked labor market. It is thus apparent
that there may be a brisk home consumpprices
This
pression, but it must come from the towns, and not from the farmers. I do not need to mention our best employed industries in de-tail in this place, inasmuch as in several of my recent letters I have touched upon such particulars as I have thought advisable for the general information of your readers.

almost certainly exists in other parts of the country, is an enormous aggregate reserve 243,150 in makers' yards, a total of 739,000 of crude iron with which to commence antiques. Just at the moment annual reviews tons. Just at the moment annual reviews and circulars are being issued in great numblowing on December 24; a decrease of two furnaces in existence or building; total, 152; an increase of 117,000 tons in the make of 1880; an increase of 99,815 tons in the experts to foreign countries; an increase of 715 tons in coastwise shipments; an increase of 715 tons in deliveries by railway to England; an increase of 21 tons in deliveries by railway to England; an increase of 21 tons in coastwise shipments; an increase of 21 tons in coastwise shipments. land; an increase of 34,155 tons (or 189,200 tons) in the consumption at the Scotch foundries, and of 47,845 tons (or 194,800 tons) at the malleable iron and steel works.

Messrs. William Colvin & Co.'s circular dries, and of 47,845 tons (or 194,500 tons) at the malleable iron and steel works.

Messrs. William Colvin & Co.'s circular gives the following interesting table as a comparative statement:

are steady, with a well-sustained demand and some freedom of forward buying. Nearly the whole of the furnaces are at work. Prices for ordinary lots are:

Consumption in Scotland Stock, jist December Average number of furnaces in blast Purnaces in blast, jist December Average price for the year Price, jist December Bank rate of discount, jist December Make of malleable from Average price of bars for the year Imports of English pig from	Total shipments for the year	Foreign shipments.	Annual production	
506,000 665,000 130 126 54/4 51/3 27/2 %	619,826	388,842	1,206,000	1870.
360,000 170,000 117 113 65/0 64/6 3 % 196,000 220,000	542,500	368,453	1,050,000	1875.
370,000 363,000 116 116 58/6 58/ 285,000	469,042	303.572	1,103,000	1876.
335,000 505,000 505,000 507,000 80 80 51/6 51/6 353,000	445,063	274.409	982,000	1877.
204,000 679,000 90 91 48/5 43/6 5 % 5 %	395,528	233,908	902,000	1878.
302,000 745,000 88 100 47/ 67/ 67/ 3 % 222,000 26. 3/ 315,000	540,523	340,385	932,000	1879.
384,000 739,000 106 124 54/6 52/3 3 3 3 3 3 35,000	641,048	440,200	1,049,000	1880.

The next circular I take up furnishes in formation as to the proprietors, &c., of the different Scotch blast furnaces and the pro-portion thereof at work on December 31, 1880, thus:

PIG IRON WORKS IN SCOTLAND.

Proprietors.	Works.	In blast.	Out of blast.	Total.
Messrs, Wm. Baird & Co.	Gartsherrie	14	0	14
Messrs, Wm. Baird & Co.		5	2	7
Mesars, Wm. Baird & Co.		5	0	5
Messrs, Wm. Baird & Co.	Muirkirk	3	0	534956
Messrs, Wm. Baird & Co.		4	0	4
Merry & Cunninghame	Glengarnock.	7	2	9
Merry & Cunninghame	Ardeer	4	- 3	5
Merry & Cunninghame	Carnbroe	4	2	6
Coltness Iron Co	Coltness	13	0	12
Dalmellington Iron Co	D'mellington.	7	3	8
Monkland Iron & Coal Co	Monkland	9	0	9
Robert Addie & Sons	Langloan	7	- 0	7,38
Summerlee Iron Co	Summerlee	6	2	- 18
James Dunlop & Co	Clyde	5	1	6
Colin Duniop & Co	Quarter	5	0	5
Wm. Dixon, limited	Govan	6	0	6
Wm. Dixon, limited	Calder	5	1	6
Shotts Iron Co	Shotts	5	0	5
Shotts Iron Co	Castlehill	3	0	3 3
Wishaw Iron Co		3	0	3
George Wilson & Co	Kinnell	2	2	4
Lochgelly Iron Co	Lochgelly	0	- 4	- 4
Mr. John Christie	Lumphinnans	0	3	2
Carron Iron Co	Carron	9	2	4
James Russel & Son	Almond	H	2	3
Mr. Henry Cadell	Bridgeness	0	3	2
		124	26	150

Messrs. James Watson & Co. give particulars of the Scotch pig iron exports during 1880 and other details:

Exports.—Shipments and railway deliveries show an increase of 107,000 tons compared with last year. There have been shipped coastwise, 200,848 tons, as against 200,133 tons in 1879, and 161,620 tons in 1878. Foreign, 440,200 tons, as against 340,385 tons in 1879, and 233,908 tons in 1879. The foreign shipments have been to fairly well employed, albeit some of the last-fairly well employed, albeit some of the last-The foreign shipments have been to the following countries:

France	1930. Tons. 25,468	1879. Tons. 23,936	1878. Tons. 25,037
Holland	105,385	124,503	110,291
Belgium, Denmark, Sweden, and Norway	18,552	19,757	19,138
Russia	23,029	22,642	21,106
Spain and Portugal	31,135	8,724	7,729
United States	234.343	139,497	15,691
British America	49,246	21,956	18,785
East Indies, China, Aus-			

Consumption-Here we have a gratifying scraps. Consumption—Here we have a gratifying increase of \$2,000 tons Scotch and 20,000 tons Scotch and 20,000 tons Scotch, and 212,000 tons Scotch, and 212,000 tons Scotch, and 212,000 tons Scotch, and 212,000 tons Scotch, and 213,000 tons Scotch and 20,000 tons Scotch and 20, English, as against 155,000 tons Scotch, and rails.

220,000 tons English, in 1879. Malleable and steel works have taken 195,000 tons

France

increase of 24 in the number of furnaces liveries, and 41/ @ 42/ for transactions ex-

No. 1 F	oundry		43/6	No. 4 Forge	38
3	46		39/6	Mottled	38
4	6.6	****	39/ 1	White	37
	75	EST C	MAST	HEMATITES	

Tiles to ordinary		
No. 1.	No. 2.	No. 3.
Cleator 70/	68/	66/
Lonsdale 64/	63/	62/
Workington 64/	63.	62/
Lowther 64/	63/	62/
Moss Bay 64/	63/	627
Harrington 64	63/	627
Solway 64/	63/	62/
Maryport 64/	63/	62/
Askham 63/	62/	61/

AT SHEFFIELD

there is a very respectable amount of work already in hand-a circumstance which has latterly been quite unusual so early in the new year. The Christmas holidays were exceptionally brief in many instances, and not a few houses carried forward a good deal of unexecuted work. Joseph Rodgers & Sons, for example, resumed on Monday, December 27, Harrison Bros. and Howson next day, and George Wostenholmes, Brooks and Crookes, &c., earlier in the week than and Crookes, &c., earner in the week than for some years past. I have spent the holidays at Sheffield and have arrived at the conclusion that the principal industries of the town are in quite a full average state of prosperity, while some of them are completely active. The razor branch, for example, is much busier than for a series of years nest, every competent workman have. years past, every competent workman having as much work as he can possibly turn out. The major part of the demand appears to emanate from the United States, where shaving is more in vogue than on this side of the Atlantic. For table cutlery, too, there is a very vigorous call on the capacities of the larger firms, on home as well as on foreign and colonial account. The electroplaters are well employed as a rule, several of these houses having finished off the old year with less unsold stock than at many recent corresponding epochs. For files, too, there is a moderately good inquiry—a change which may render adverse wages movements unnecessary. The tool manufacturers are doing well, particularly those who are smart and keen after "novelties," and are pushing persons generally. At the iron and works there is a large production, and there are orders on the books which will provide occupation for several weeks ahead. The temporary collapse, so to speak, of Brown, Bayley & Dixon, is an unfortunate matter. The concern has been well engaged for some months, and the books are said to be fairly filled with orders. From the very outset, however, the company has been over-weighted with capital, and the dead charges thereon have been so heavy that it has been almost impossible to make dividends. Those who know Mr. Holland, the manager, will much regret the untoward fate against which he has contended in vain, and will hope that the new arrangements will leave months, and the books are said to be fairly hope that the new arrangements will leave him in a position to demonstrate his abilities in a more satisfactory manner. The cred-itors and shareholders meet separately during the present week. The former are likely to express themselves strongly, and the latter are scarcely to be expected to sacrifice a portion of their property without complaining. Many rumors are in circulation as to the proximate causes of the present proceedings. One runs to the effect that an order for tramway rails of a peculiar sec-tion was taken, but could not be rolled. After some attempts the rolls are said to have given way, and Bolckow Vaughans were paid (so saith the story) £5000 to complete the order. Personally I don't believe the narrative, nor others which allege a loss of £3000 a week for months past on the railmill work. Mr. Holland is a competent practical man, and he must have been over-

fairly well employed, albeit some of the last-named establishments are suffering from the effects of overproduction and the de-termined bids of new firms. Much of the business doing is on American account, as is demonstrated by the following figures, showing the exports from ports in the Bristol Channel during the month of December: To New York, 887 tons of blooms, 63,420 pain and Portugal. 5,454 8,724 7,729 boxes of tin plates, 700 tous pig iron, 400 and 1018, 301,420 boxes of tin plates, 700 tous pig iron, 400 and 518 feet 49,846 21,950 18,782 tous crop and and scrap, 6135 bundles fish plates, as Indies, China, Australia, South America, 24,753 20,089 15,180 boxes of tin plates, 700 tous pig iron, 400 tous crop and and scrap, 6135 bundles fish plates, 305 cases yellow metal, 29 cases nuts and bolts. To Boston, 612 tous crop ends and To Philadelphia, 1114 boxes tin Lugusn, as against 155,000 tons Scotch, and 220,000 tons English, in 1879. Malleable and steel works have taken 195,000 tons Scotch, and 123,000 tons English, as against 155 tons of rails. To San Francisco, 600 tons rails. To San Francisco, 600 tons rails. To Vera Cruz 1128 tons of rails were sent. Freights to 147,000 tons Scotch, and 95,000 tons English, in 1879. The production of manufactured iron and steel has been 292,000 tons. Shipbuilding.—This important branch has

man. 38. At Havre Spanish First Fusion Soft is worth 37.50 @ 38; at Marseilles First Fusion Soft. 35 @ 35.50; Sheet and Pipe, 41, and Shot, 41.50; Second Fusion Soft, 33. Spelter.—Silesian at Havre may be quoted 40.50; other good brands there, 40.50, and at Faris, 41. Sheet Zinc at Marseilles, 35.50 @ 54, and old Remelted, 84.46. Harve quotes Silesian 42. Hron.—The revival in the Iron trade in France has become a general one, and from all quarters orders are flowing in upon producers. We believe we do not exaggerate in estimating the amount of Iron and Steel ordered in France since the inauguration of the improvement in the branch now witnessed, at 1,500,000 tons. Merchant Iron now currectly commands 18.50 francs per 100 kilos, and flooring ditto, 19. For the moment a quieter feeling prevails, but orders are dropping in daily. Coal.—The flatness lately noticed continues,

BELGION.

BRUSSELS, Jon. 3, 1831.—Iron.—The general aspect of the Iron situation has experienced no change since we last reported; the holidays have spread a momentary quiet, but there is every prospect that we shall now see business resumed most actively. We are on the eve of a sories of most important adjudications which contribute by anticipation to impart great firmness to prices. Pig Iron is firm at 6 @ 6.10 francs for English Moulage at Antwerp, while Affinage remains as heretofore, 5 @ 5.50. Merchant Iron is steady at 1s francs. Sheet Iron has continued to look up, and we quote the same 17 francs. The German trade papersibusy themselves about the purchase of some special mining machinery which the Mansfield Company ordered to be made by Cockerill, of Seraing, instead of in Germany. Some seem to think it highly unpatriotic to order such machinery abroad, instead of at home, but the Mansfield people answer that Cockorill knows precisely what they want, and that for the sake of patriotism they cannot run the risk of ordering machinery which may not fully answer their purposes although cheaper, for any failure may involve a loss much greater than any difference in price. Coal.—This remarkably mild winter of 1833-133 has been light, and the wide-spread inundations have put a stop to canni havingation. As soon as the waters subside, activity will be resumed, at least so far as Coal for industrial purposes is concerned; meanwhile prices have been upheld.

GERMANY.

HAMBURG. January 2, 1831.—Iron.—We are informed from Dortmund that there has been no change in the Iron situation; the holidays have spread a dead caim. The impression seems to be a general one, however, that the little revival recently commenced will soon assume more ample proportions, and that, in common with England. France and Belgium. our Iron industry is bound to breathe freer in the immediate future. "We quote," our correspondent adds, "Foundry Pig. No. 1, 74; No. 2, 72; marks per ton; No, 2, 67; Merchant Iron, 113 @ 130; Sheet No. 2, 180 @ 185; Plegan, thin sheets, 190 @ 195; rails for mines, 113 @ 120 marks per ton, all at the works. Coal.—The companies complain of the lack of business produced by the untoward state of the weather Communication is interrupted by the inundations, the result of incessant, torrential rains, and many mines are flooded to such an extent that engines do not suffice to pump them free. Prices have been sustained so far, but cannot be upheld if the mild weather is not soon interrupted by steady frost." From the Moselle and Surre region, the same as from the lower Rhine and Westphalia accounts, so far as the fron outlook is concerned, remain highly encouraging; the improvement has come gradually and on its own strength, at a moment when prices, six weeks ago, had nearly reached the lowest point since 1873; speculation has had no share in producing and bolstering up the rebound; it has been a natural reaction from an excessive depression, and is therefore well calculated to inspire confidence. Metals.—Have remained steady. Copper.—Berlin quotes English and Australian, 67,50 marks the 5 dito, 3 marks the 5 dito, and Mansfeld, 71.37½ @ 71.50; here we are with Drontheim, 74.52 @ 75.50; English, 68 @ 60; ditto Sheathing, 75, and Yellow Metal ditto, 50 @ 57. Tin.—Berlin quotes the name, 0.45.60 @ 58.75; here (Borsenhalle.)

(Koch & Vlierboom.)

ROTTEBDAM, Dec. 14, 1380.—Tim.—The market here has been very quiet, but firm, with sales of Billiton affoat at 5.5 guilders the 50 kilos. the closing quotation being 55.50 for Banca, and 55.25 for Billiton. The position of Banca tia in Holland on December 30, according to the official returns of the Dutch Trading Company, was: Import in December. Slabs 12,615 8,899 8,353
Total twelve months 12,615 8,899 8,353
Deliveries in December

	Total twelve months Stock second hand Unsold stock	7,300 123,968 41,196 53,833	9,300 137,406 48,726 42,240	4,517 814,276 50,000 22,418
-	Total stockPeculs	95,029	90,966	72,418
	Statement of Billiton: Import in DecemberSlabs Total twelve months Deliveries in December Total twelve menths Stock Affoat Pecuis Quotations, Dec. 30—Banca. Billiton.		750 117,008 8,298 113,456 57,254 11,000 55 fl.	8,400 109,345 5,982 94,820 57,912 22,000 39 fl. 3734 fl.
1	The Government returns for			

	For	Octo	ber.	For	ten me	onths
То	1880. T'ns.		1878. T'ns.	1880. T'ns.	1879. T'ns.	1878 T'ns
Germany		270	293	2335	2529	281
England		28	10	1178	475	13
Belgium		166	126	2198	1240	122
France		69	43	560	448	34
Hamburg	59	18	30	648	328	51
The U. States			0.0.	368	348	1
Oth'r countries	127	227	116	677	448	54
Total	793	976	615	8464	5885	558

AUSTRIA.

(Austrian Trade Journal.)

ANTHAL

Clastriam Trade Journal)

For Land, Oregon, 1794 tons rails. To Galveston, 413 tons rails. To Sen Francisco, 650 tons rails. To Vera Cruz Scotch, and 23,000 tons English, in 1879. The production of maunitant on the control of the property of the property

(Weber & Co.)

(Weber & Co.)

Valparaiso, Nov. 12, 1330.—Copper.—The import trade has been more lively; dealers do not seem to hold large stocks, but they do not pay prices high enough to compensate for the current rate of exchange, and if importers do not wish to take their goods into store, they have to take low prices. Coal.—Several cargoes Steam Coal have sold to the government at 30/30 31/, to be defivered on the coast. The Nitrate ports are still well stocked with Coal; the government is thus the sole purchaser, and a cargo has sold to the latter at the close at 28/. Coal for smelting sells at \$9.50 (%) since the coast, at which it is neglected. Copper.—Our market is quiet; holders ask prices which exporters do not feel disposed to pay in view of fluctuations in exchange; thus sales have been restricted to a few lots on shore here at \$20.75 (%) \$21.25, and 2.9 Lota Bars at \$1.25, free on board with 50/ steam freight to Havre, At the close the market is flat on dull cable advices from London; 13,64 quintals sold during the fortnight at \$0.50 \$21.55. Nitrate was at first active, but then relapsed into a quiet attitude, buyers waiting for a decline. I quique forcesses a decline in production from a scarcity of hands. As Europehas latterly received less of a supply from this coast, and as the stocks there are not large for the near spring season, it is more than likely that prices there will look up again. Charters for the fortnight do not exceed 200 tons. The government rechartered three vessels secured in excess of requirements; in all the present month the last of government Nitrate will all be shipped. Sales 147,000 quintals at \$3.50 (%) \$5.50 for the latter country.

To North of Europe To the Mediterrrane To the United State Constwise	811 35.433 8 618,688	1879. 2,747,162 849,379 5,819	1878. 4,823.930 111,169 711,453 2,728
Total Exchange 271/2d. @		3,002,360	5,649,280

It appears that the Canadian government has dealt more generously with the Canada Pacific Ruilroad Syudicate than was at first The clause in the contract which says that the government shall "cause to be completed" the section of the road between Lake Superior and Selkirk, and that between Kamloops and Port Moody, upon both of which considerable work has already been done, means that the government shall pay the construction bills and present these sections free of charge to the company. The tions free of charge to the company. The Toronto Globe says that the two sections when completed will cost the government \$32,250,000, with an additional \$3,119,000 for surveys. It estimates the value of the company's land grant at \$50,000,000, and figures up, including the \$25,000,000 subsidy in money, a gift from Canada to the railway company as countries in all to the value of company amounting in all to the value o \$110,369,000. The cost of the sections to be built by the company is estimated by the Globe, on the authority of Mr. Fleming, who is quoted as a competent engineer, at \$48, 500,000. The company is, therefore, if these figures are correct, to get the absolute ownership of 2689 miles of road, and land and money to the amount of \$75,000,000, for an expenditure on its part of only \$48,500,

Probably the error in the Globe's tables will be found in its estimate of the value of

the land, which it assumes to be worth an average of \$2 per acre. Much of it will not

be worth 2 cents an acre, and the company will be lucky if it gets out of the whole grant an average price of \$1 an acre above the expenses of selling it. Besides, the company undertakes to run the road after it completes it, and it may have to operate it at a loss for many years until settlement along the line and at its western terminus is dense enough to furnish it with a profitable amount of traffic. But however this may be, the original syndicate is to have compebe, the original syndicate is to have competition, and has already been underbid. The Ottawa correspondent of the Toronto Globe says: "I am in a position to announce that a syndicate of well-known capitalists, railroad contractors and business men has been formed for the construction of the Canadian Pacific Railway, on terms eminently more favorable to Canada than those terms now awaiting the ratification of Parliament. The political complexion of the syndicate will be mixed. Among the names of those who are rumored as likely to enter the syndicate raixed. Among the names of those who are rumored as likely to eater the syndicate are Sir William Howland and H. H. Cook, Member of Parliament, of Toronto; J. McLaren, of Buckingham; Col. Wilkes, of London; Col. Allan Gilmour, of Ottawa; J. Carruthers, of Kingston; W. H. Howland and Allan College Medical Medical Parliaments. J. Carruthers, of Kingston; W. H. How land, and a number of others. It is believed Schultz, Member of Parliamen and W. Gooderham, Jr., of Toronto, will eventually enter it. The terms are said t be most favorable to the country. The new syndicate will construct the Pacific Railroa on a cash basis of \$20,000,0000, instead of \$25,000,000 as now proposed to be given, and of 20,000,000 acres of land, instead of 25,000, coo-these amounts to be equitably propo-tioned among the three sections of the ros according to the relative cost of constructing each section. The new syndicate will probably consent to postpone the construction of the line on the north shore of Lake Superior if the country desires it. The syndicate will consent to pay Customs duties on all materials imported for the construction or subsequent operation of the road, to pay a percentage of from 5 to 10 per cent. upon their gross earnings to the Dominion

preme Court, Chambers, who has set aside the decree for irregularities in the proceed-ings, and on evidence that the corporation was not and is not insolvent. For the pur-pose of protecting the receiver, who acted in good faith, and whose administration of his owers has been beneficial to the company, udge Barrett has directed the petitioners to demur, or put in a supplemental answer to the complaint for the purpose of showing the company's present solvency, and having the receiver regularly discharged. Mr. Theodore M. Morgan appeared for the petitioners, and Mr. Algernon S. Sullivan appeared in opposition

Gauze Doors for Cook Stove Oven.

The following letter, which appeared in the last issue of The Metal Worker, will have interest for many readers:

Excelsion Manufacturing Co., }
St. Louis, Jan. 8, 1881. }
To the Editor of The Metal Worker—Dear

SIR: In September last, I gave you an account of the operation of our range, using a wire-gause door in place of the ordinary one. Those experiments were continued up the middle of October, using the range out of doors, with the gauze attachment, at the various fairs about the country, the cold weather seemingly having no effect upon the operation of the range. In order to make further tests with a greater degree of cold, I have purposely waited until the present cold snap furnished the opportunity, and I now have to report some tests I made last week, the thermomoter ranging from zero to 10 degrees below, with stormy winds blowing directly into the oven. I placed one of our ranges (gauze door) in the rear of one of our ranges (gauze door) in the rear of our store in the alley, with four joints of pipe. This alley runs North and South, and under a bridge. At the side of the bridge on each side of the alley are vacant open lots, at right angles to the alley, where a great rush of wind usually takes place. The range was placed where the alley and open lots intersected, so that we could get the full benefit of the cold winds rushing through this space into this range and oven. Purposely a good strong fire was made, and posely a good strong fire was made, and when the oven got warmed, four loaves of bread, filling the oven, were placed therein. In 8 minutes the bread commenced brown-ing, the oven exhibiting too great a heat; then the slide damper in the front of the stove was opened, in order to check the draft and cool the oven. In 23 minutes the oven door was opened, when the bread was found to be burned black—bottom, to and sides—showing the oven to be evenly heated. This experiment proves that the cold air had no perceptible effect in cooling the oven. The next day the experiment was renewed with the thermometer at zero and five degrees below, but with a smaller quantity of fuel to show how little could be used, but as my friend, Mr. Uriah Hill, of the Union Stove Works, Peekskill, was here and could not wait to get the dough for the bread, we baked a cake, covering about one-half of the bottom of the oven, in 25 minutes. The cake was perfectly baked, and we had the pleasure of eating it for our lunch. The experiments of this day can be verified by Mr. Hill, and shows that cold air up to five degrees below zero has no perceptible effect on baking in our range with the gauze door. Now, what shall be said of those parties who insist that oven doors should be tight fitted to make their stoves operate, or those who claim a virtue in tin-lined doors to reflect the heat inwards, and more especially those who find it necessary not only to make their oven doors double, but to fill the air space with some non-conducting substance? Either they are wrong or we are, and the facts can be easily determined by trying the experiment. For our part we intend to abandon the foolish and adopt the sensible. Respectfully yours, G. F. FILLEY.

The Leadville District in 1880 Leadville Democrat publishes the folloing statement showing the output of the new bonanza camp during the year just closed:

Months.	Founds of lead bullion.	Ounces of sliver.	Ounces of gold	Total of ore shipped.	Total value for month.
January February. March April May June July August Septemb October November December	5,167,429 5,092,719 5,040,238 4,953,673 6,177,660 4,227,828 4,598,738 9,996,039 7,524,747 6,443,950 5,661,982 5,866,857	1,045,356 808,758 748,403 636,716 864,388 619,489 676,287 769,248 848,715 757,366 625,853 583,830	154 169 91 4 4 300 350 251 196 12	610 1,275 925 873 887 664 1,162 2,937 1,690	\$1,616,035 1,385,605 1,304,093 1,080,726 1,378,664 1,040,283 1,041,184 1,364,179 1,556,599 1,288,463 1,040,027 929,295
Total	67,721,856	8,979.399	1,688	12,410	15,095,153

Mr. Paul Metz, 217 Upper Thames street, London, has brought out a novelty in the London, has brought out a novelty in the way of a pocket knife which is a radical departure from customary forms. The handle is divided in halves, lengthwise.



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on the market, at least a dozen patent braces have run their race through the stores and junk stores, and are now forgotten. It is true, some of them died violent deaths, but most of them perished from constitutional weakness. We do not offer to meet competimost of them perished from constitutional weakness. We do not offer to meet competition, as no one else can make our Brace, and we have nothing to compete with. Others might if they would make their braces of steel, but it is much more expensive, and no one can tell the difference until the brace is put into use. All of our Nickel-Plated Braces are made of rolled steel, with forged steel jaws, which will never wear out. We formerly made malleable iron jaws, which in time wore out. All such we will now replace with steel for 25 cents per pair. They are all one size and will always fit. Our Ratchet Brace at the present time has no competitor in the market. Dealers who sell other styles of braces will find it to their interest to buy their stock of ratchets from us.

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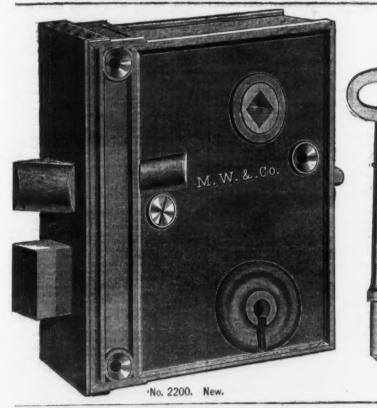
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The Cotton Manufactures of the Country.

The following is a preliminary report to the Census Bureau upon the specific cotton manufacture of the United States, exhibiting the number of looms and spindles, the number of bales of cotton consumed, and the number of operatives employed, as reported by Edward Atkinson, of Boston, Mass., special agent of the tenth census in cotton

Self-Feed Drills,

For Blacksmiths' and Carriage Makers' Use.

States.	No. looms.	o. spindles.	No. bales cot- ton used.	ployed.
	×	No	Z	7
Alabama	1,060	55,071		1,600
Arkansas	28	2,01		
Connecticut	18,035	931,538	107,877	15,497
Delaware	823	48,858		695
Florida		8x6		
Georgia	4,713	200,974		6,678
Illinois	24	4,860		281
Indiana	776	33.396	XX,558	730
Kentucky	73	9,022		359
Louisiana	120	6,006		801
Maine	15,978	696,685		11,319
Maryland	8,325	125.014		4.159
Massachusetts	94.788	4,465,290	578,590	62,794
Michigan	131	12,120	600	
Mississippi	704	26,172	6,411	748
Missourl	341	19,312		515
New Hampshire	25,487	1,008,521	172,746	36,657
New Jersey	3,344	232,305	80,569	4,658
New York	12,822	577,512	70,014	10,710
North Carolina	1,960	102,767	27,508	3,428
Ohio	42	14,320	10,597	563
Pennsylvania	10,541	446,379	86,355	11,871
Rhode Island	30,274	1,649,295	161,694	22,228
South Carolina	1,776	92,788	33,099	2,195
Cennessee	1,068	46,268	11,699	1,312
Texas	78	2,648	946	71
Utah	7.4	432		29
Vermont	1,180	55,088	7,404	735
Virginia	2,324	44.336	11,461	1,113
Wisconsin	400	10,249	3,173	282
The United States	200 029	70 027 747	r +86 +8+	181.628

The United States. 230,223 10,921,147 1.586,481 181,628 The above does not include the hosiery mills, or any of the woolen mills known as woolen mills where cotton may be a component material used in the manufacture.

In the case of the recent boiler explosion at Allentown, Pa., by which 13 lives were lost, the coroner's jury were unable to form any opinion as to the cause of the accident, and so declared in their verdict. Two days before, a committee of the Keystone Council before, a committee of the Keystone Council of Engineers on the Allentown explosion made their report, showing that the boiler gave way at its weakest part, where its own weight might have broken it down at any time. The explosion was due, among other causes, to faulty construction, unskillful repairing, bad management and neglect. No censure is leveled against any one, but those responsible are left to the logic of facts. If the coroner's jury had worked on this information they might have found that somebody was open to mild reproof.

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Old Colony Rivet Co., Kingston, Mass.,
Townsend W. P. & Co. Pittsburgh, Pa. Garrison A. & Co., Philaduran,
Roofing,
New T., 30 John, N. Y.

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Universal Sash Lock Co., Albany, N. Y.
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Boynton E. M., so Beekman, N. Y.
Disston Henry & Sons, Phila.
Farmers' Mfg. Co., Cincinnati, O.
Gerlach Peter & Co., Cincinnati, O.
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Wheeler, Madden & Clemsen Mfg. Co., Middletown, N. Y.
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Farr Asa, 64 College Place, N. Y.
Seates, Manufacturers of.
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Charillon John & Sons, of Cliff, N. Y.
Olsen Tinius & Co., Philadelphia.
Riche Fros., 4th above Master, Phila. 26&
Scrapers.
Revolving Scraper Co., Columbus, O. Scrapers. 4th above Master, Phila. 263
Scrapers. 263
Scrapers. 264
Screws. Makers of. Columbus, O. Screws. Makers of. Billerbeck J., 17th and Venango Sts., Philadelphia. Bruce Geo. W., 1 Platt, N. Y. Miles F. S. 205 Quarry, Philadelphia Scrapers. 264 Bruce Geo, W., i Platt, N. Y.
Miles F. S., 205 Quarry, Phila
Philadelphia Screw Co., Philadelphia, Pa.,
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Wiley & Russell Mfg. Co., Greenfield, Mass
Weils Bros, Greenfield, Mass,
Screw Brivers, (Improved) Makers of
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Shot, &c.
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Manning & Squier, 113 Liberty, N. Y.
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Spiegeleisen.
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Phillips E. & Sons, South Hanover, Mass.
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Wiley & Russeil affs, Co., Greenfielo, Mass.
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24

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American Wire Nail Co., Covington, Ky. Sedgwick Bros., Richmong, Ind.
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	and
IRON.—DUTY: Bars, I to 11/60. W h; Sheet, B Hoop and Scroll, 1/4 to 11/60. W h; provided, that n of the above Iron shall pay a less rate of duty the per cent. Pig. 87 W ton; Polished Sheet, 20. % Wrought Scrap, 48 # ton: Cast Scrap, 26 per Ballroad 700. W 100 hs. Boiler and Plate, 11/60. W	b i
Foundry No. 2 W ton \$24.00	
Follows BCOTCH.	
Carribroe # fon 22.00 Coltness # ton 34 50 0 1 Giennarrock # ton 34 50 0 1 Gartsherrie # ton 30.40 6 2	4.00 4.00
Rain.	- 1
Iron	2.00
Common Iron:	1.50
Menned Iron	
7 to 5 inx% to 1 in	.7C
Sheet Iren.	
10 to 20	m.
27	al.
21 to 21	70 80 60 60
Patent Planished. # b 120: B, 16 Russia	20
COPPER. DUTY Pig. Bar and Ingot. c; Old Oc per 4c B; W Manufactured (including all article which Copper is a component of chiefvatue), 45 %	op 1
American Ingot B See Trade Repor	t.
EHEATHING, BRAERIES COFFER, BOLTS, &C. Brailers' Copper, ordinary sizes, itoz. per sq. ft., and over per lb. Brailers' Copper, ordinary sizes, under 16 os. and over 12 oz., \$\pi_{S}\$ of. ft. Realiers' Copper to oz sud 12 oz., \$\pi_{S}\$ of. ft. The legiter than 10 oz. \$\pi_{S}\$ of. ft. Threles less than \$\pi_{S}\$ iz. n diameter threles \$\pi_{S}\$ in. diameter and over.	10 I
and over 12 Oz. # Sq. It	20
tireles & in. diameter and over	
Rheating Copper, over 13 OL W sq. ft. W b 2 Bolt Copper. W b 2 Sopper Bottoms. W b 3 No Copper is Sheathing except 14x48 inches and no exceed 34 OL to the so. ft.	BC
14x4. ** ** ** ** ** ** ** ** ** ** ** ** **	
and it or, and heavier. 7 h 36s By the case. W h 3 os, and lighter. W h 39c . W h 3	ic A
Boiler Street, 7 in., 14x5a. 8 in., 14x6., 9 in., 14x6., and 15 oz. and heavier, \$\psi\$ 36. By the case. \$\psi\$ 37 (And all sizes not over 20 in. wide.) 1 x x00.	e Z
and Soz. and heavier	
Brown & Sharp's Gauge the Standard for Wire. English Gauge the Standard for Wire. BRASS'MANUFACTURERS' PRICE LIST.—dis 20f. June 10, 1880.	d
Cash prices for Roll and Sheet Brass. For less quar fty than 100 Ds. add 30 ₹ D. HIGH BRASS.	
All Nos. not thinner than to No. 18, wider than 2 in. not wider than 1-1 II. All Nos. to No. 28, inclusive, and widths over 14 to 25 in., inclusive.	W
is in, inclusive	1.89
All Brass thinner than No. 8 is Platers' Brass, at 49 Shoets 2448, and all sheets cut to particular sines and lengths under 30 in., in width wider than 3 in., 39 Printers' Bules.	e N
40 in. and over	Se Ci
11 070714 120, 11 -451 11 01 02 01 30, 41 -451 11 13 30 14 40, 11 -451 11 40 18	G
LOW BRASS.	Bu
Platers' or Gold Metal Sawed 510 Planed or Polished 910 Pon SLITTING.	80 W
Metal in width 2 in. to 16 in. to No. 28, inclusive, 10. U b advance. Metal, in width 2 in to 1 in. thinner than No. 28, 20. U b advance.	Le So
advanc	Pu
No. 28, 20. W in advance. Metal, in width 1/4 in. to 1/4 thinner than No. 28, 50. W	Bit
Metal, & in. in width and less, ICC. F B advance. Any of the above widths cut to particular lengths, add 7C. F B. GERHAR SILVER HARKET METAL AND WIRE.	
4 per cent., 13 inch, to No. 26	
# # 1	Bio
ore than to bat, \$2.00 & b. Advance to for each additional inch in width above 2 in., and sc. \$4 B on each No. thinner than Nes. 36 to 6, inclusive	Bla
All German Silver thinner than No. 36 is Platers, at ce was cilitional. German Silver Scrap one-half less than net price of . In Karket Metal. German Silver Turnings, Filings	Blu
and Chips. half the brice of Scrap. BRASS AND COPPER WIRE. Gild'g and High Brass. Low Brass. Copper.	Bro
(0.22	Gre
0.24	Iro
O.20	
0.31	Min Ora Rec
Boring Wire 20 P B advance.	80 80 80
Price Rods, No. 8 and larger, not less than 2 feet	Ros
Wire straightened and CUE, Smaller than NO. 8, and of less than 2 feet lengths, 43c. Wire and Rods less than 2 feet lengths, special rates.	Um
MISCELLANEOUS.	Ver
rass Pail Ears. \$0.00 r ass Door Kail \$6.00 r ass Door Kail \$6.00 \$6.00 \$6.00 \$6.00 \$6.00 \$6.00 \$6.00 \$6.00 \$6.00 \$6.00	Wh
Turnings, Filings and Chips half the price of Scrap.	Wh
Terms—Net cash. Interest to be added after thirty ays. Ays. TUBING.—dis 20 S April No. 2 inclusive above 4 in. to 3 in	Yel
os. 21, 22, 23, two cents advance on List for each Number. 90. 22, 75, 26, four cents advance on List for each Number. bove No. 26, special rates.	Zin
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	Bles
and a Seatch and Extra Patterns Fancy Tubing	Sign Prin No. Wes
vance on Lisa	Wes Dril Emp
Dater reet. U Mandrei Drawn Tubes under % in. 25 conts per gound advance. Zinc Tubvio.—dis 20 %. 27 28 29	Fish
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	4 Per cent. GERMAN SELVER TUBING.—dis 10 %
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	STEEL DUTY: Bars, Ingots, Sheets and Cous
50	Railway Bars, in part Steel, I cent w m. Provided,
ac	description, shall be classed as
00	American Cast Steel.
00	
00	Pittsburgh.
\$c	Engited Steet
00	Best Cast
	Extra Cast D 15/60
20	Waged Cast W B 160
	" Best Double Shear B 15%c
	" Blister, 1st quality 130
10	German Steel, Best D tic
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re	30QUALITY W B 12160
0	ANTIMONY Bee Trade Report LEAD, DUTT Pig \$2 \$0 to 0 to 1 to 1 to 0 to 0 to 1 to 0 to 0
0	LEAD DUTY Pig \$2 W too Bs : old Lead, 1940 B w
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la.	Pipe
	Tin Linea Pipe
	Sheet
	Chilled Shot
	Fipe and sneet, Fage w B. American
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e	A. 250 t B. 200 : C. 150 .
0	TINDUTY: Plates, Sheets, Tagger and Terne, t.ic # b; Electro-galvanized Plates, so # b; Manufactures of, not enumerated, 35 per cent. ad. val. Bars, Block and Pigs free. Banca, subject to duty of 10 per cent.
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1	ZINU,DUTY: Pig of Block, 1.50 W no Ss. Sheet side W n. Sheet, Cask
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Kentucky Bagging	2	3 33
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White Shavings, No. 2. Mixed Shavings, part	. MOET \$54	44
ledger and Writing	354	3 K
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Pure Manilas Bogus Manilas and Ha Commons	rdwares 136	黄 讚
Commons Sinders' Board Cutting Straw Board Cuttings	FB	14
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1000	Paints, Oils, &c.
3	Paints.
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9	" Ordinary
1	Black Paint, in oilkegs &c asst'd cans, and
,	Plue Prustan, fair to best
	Ultramarine
	Black Lamp. Coach Painters
	Green, Chrome
1	Paris
-	Brown B 1360
	Ground in Oil, Bright Red h 53cc
	Brown
	Mineral Paints
	Red Lead, American
	n oil asst'd cans, 11c; kegs, 8c
	Rose Pink
	" Burnt
	Umber, Barut
	Raw
	Vermillion, Chineso
	English 55 @ 57%c Trieste. 65 @ 57%c Trieste. 65 @ 57%c White Lead, American, pure dry 50 %c White Parls, English, prime in oil: 7% for 7%c White, Parls, English, prime in oil: 8% for 7%c Yellow Ochre, French 10 oil: assi'd cans, ric kess. 6 %c Yellow Chrome 10 casks, 15%c Yellow Chrome 17 % 27%c
	White Lead, American, pure dry8c
	Vellow Ochre, French
	Yellow Chromein casks, 11/6, 220
I	Zinc White American No. 1, dry 14 @ 18 @ 25C
Ì	Yellow Chrome
	Linseed, Raw, in casks and bbls gai. 56c
	Linseed, Raw, in casks and bbls. gal 56t Bolled 9 95c Bleached Whate 9 28t Berm 9 28t Elephant 7 Fillow 9 28t Elephant 7 Fillow 9 Fillow 9
I	Signal 60 Prime Lard 50
ĺ	No. 1
l	Empire Cylinder
	Fish Oil, pressed
I	Tallow

1		1	Sund	rles.			
Benz Chai	ine k Biock r. Paten	(, Am'n			t can	, roléc	gal 16
I Gine.	White.	nts, Zinc.					33 @ 44
Glas	Conal						20
Litha	shellac	English	dark		******	*******	43
Pumi	o Stone.	selected	Lumi	08		**** ***	3%
Boirt	in bulk	ders					2%
Whit	ing Span	ish					56
			Glas				
		FRENCH	WIND	OW GE	A88.		
	Pri	ioss ourre	nt pe	r bow	of 30 fe	est.	
	Sing	e Thick.	-Disc	ount	so and	25 %.	
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sites.	ıst.	ad.	34.	4th.
6 X 8 to 10 X 15	7.35 9.35 11.00 11.75 13.35 14.00 15.00	10.00 10.75 12.50 13.00	9.40	\$ 5.25 6.00 9.35
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6 x 8 to 10 x 15	\$ 8.25	8 7.75 9.25	8 7.50 8.75	8 7.00 8.25

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inches in length, and not making more than it unite nches will be charged in the it united inches bracket



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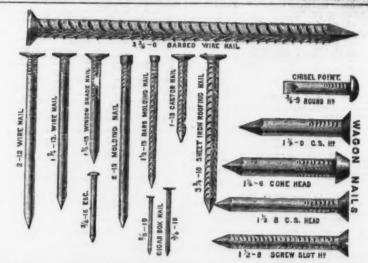
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AAAAEEMAAAAEEMAAAAEEMAAAAEEMAAAAEEMAAAAEEMAAAAEEMAAAAEEMAAAAEEMAAAAAA	Recutcheen Pins dis 20 Strass dis 40 S	I B I B B B B B B B B B B B B B B B B B
AAAEERAAEEEJJEVEMERVLU E P E E CSCAADGC B PP	Kacutcheen Fins. Iron. dis 20 Strass. dis 42 Strass. dis 42 Strass. dis 45 Strass. dis 55 Stras	I S I SOLESEL I LOOCEE C CHC P TW ROWE & AN H
AAAERAAREELIJEVEMEPLO E COORDANGO B COOR	Kecutcheen Fins. Iron. dis 20 Strass. dis 42 Strass. dis 42 Strass. dis 42 Strass. dis 42 Strass. dis 43 Strass. dis 45 Strass. dis 55 Strass. dis 55 Strass. dis 55 Strass. dis 55 Strass. dis 5	I S P SOLESE C CHC P TF FROM H
AAAEEKAAEEELLLEVYEMERVAU E E E COCAAAAACEEELLLEVYEMERVAU E E E COCAAAAACEEELLEVYEMERVAU E E E COCAAAAACEEELLEVYEMERVAU E E E COCAAAAACEEELLEVYEMERVAU E E E COCAAAAAACEEELLEVYEMERVAU E E E E COCAAAAACEEELLEVYEMERVAU E E E E COCAAAAACEEELLEVYEMERVAU E E E E COCAAAAAACEEELLEVYEMERVAU E E E E COCAAAAAACEEELLEVYEMERVAU E E E E E E E E E E E E E E E E E E E	Recutcheen Fins	I S I S I S I S I S I S I S I S I S I S
AAAEEENAEEEJJEVFFMHPLUU E E E E COCCADOGO BE COCE	Recutcheen Fins	I S I S I S I S I S I S I S I S I S I S
AAAEEENAEEEJJEVFFMHPLUU E E E E COCCADOGO BE COCE	Recutcheen Fins	I S I S S I S S I S S S I I S S S S I I S S S S I I S S S S I I S S S S S I I S S S S S I I S
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Recutcheen Fins. Iron. dis 20 Strass. dis 45 Stras	I S I S S I S S I S S I S S I S I S S I S
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Recurcheen Fins	I SOLISES TO COUNTY OF THE A AN H
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Recutcheen Fins. Iron. dis 20 Strass. dis 45 Stras	I S I S I S I S I S I S I S I S I S I S
AAAEERAAEERTLU E P E E E CSCAAAGGC BI CCCB HP.	Recutcheen Fins	AN H R. M. T. NNWOWLIG CARE
AAAERAAERHJJJEVEMERVLU E P E E COCAAAA BAA W AAA BAA W AAAA BAA W AAAA AAAA AAAA AAAAA AAAAA AAAAA AAAAA AAAA	Recutcheen Fins	ESTATE OF THE CONTROL
AAAEERAAEEE J. J. DOFEMENT LOUIS AAAEE AEE AAAEE AAAAEE AAAAEE AAAAEE AAAAEE AAAAEE AAAAEE AAAAAA	Recurcheen Fins	AN H
AAAAEERAAEERAAEERAAEERAAEERAAEERAAEERA	Recutcheen Fins	HOOOCEE C CHCC P TW WGGWH A AN H

_	J	
iet iet iet iet	Wilkinson's Smiths'	20 % 50 % 8 5 % bro % T 0 % T 20 % H 15 % P
et et	Hand Cuffs and Leg Frons. Providence Tool Co.'s Hand Cuffs, \$15,00 \$\psi\$ dos} dis Tower's dis	IO % D
N.	Handles.—Door er Thumb Latches— Nos o I 2 3 4 4 dis 55% Per door \$0.50 1.00 1.18 I 35 1.50	D1
×	Bronked frod Prill Lakeness, will a \$0.00 St. Rt dis Sand Plate, \$1.05 no Plat	IO % Co
HHMMMH	Ceutennial Saw Handies	25 % 20 % 10 % Tr La
MAN NAMI	Hammer and Halcace. Hickory Firmer Chisel, assorted, # gross \$4.00, dis 20& Hickory Firmer Chisel, assorted, # gross \$4.00 Applie " large, " 5.00 Booket " assorted, " 5.00 Framing " assorted, " 5.00 File, assorted, # gross. 2.75 Auger, assorted, # gross. 5.00 Inge, " 7.00 Patent Auger, Ives" 0.01 Bouginss" Feet \$1.24, Fangers.	Is in %
MANAM	Boughas"	net Planet P.
t = = = = = = = = = = = = = = = = = = =	Hangers. Barn Door, old patterns dis co&: Now England dis co&: Novety. dis a Challenge. dis Sterling Improved (Anti-Friction). dis S	NO N
N N N N N N N N N N N N N N N N N N N	Henshaw'sList of 1½ charged to 14 co, dis 55 @ 6 Fitz'h's (Bristol)	0 % Pad 0 %
	ERGEORGES.	
	Saiah Blood	Mil Per
	Burd's	Hal
	Ciaw Nos. 1 2 3. \$7 dos 8.75 8.76 6.85 81 mmon \$9. dos 7.50 8.00 8.45 81 mmon \$9. dos 7.50 8.00 8.45 81 mmon \$9. dos 8.75 \$9.00 \$1.0	Kie Silv Pen
	Collins Nos. 5578 \$\psi\$ dos 16.00 20.00 22.00 25.0	79.0
	Hing Misses P dos \$20.00 m	et Cow
	" N. E 0 dor 810.13. dia 6:&5	% Cha
-	A. E. REVOURSIDE:	No.
8	Collect Filter Coll	Was Na Table Rlak Turk
S VI	Frought Strap and T. Ust Dec. 20, 77,dis HoesRivoted Shankper dos, \$5.00; dis 35; Ocket	U. 8. Navy Of Bras Malie
G P Si Si	Hoes	Prior
	/insted & Lane, Planters	
C	ott on, Patented (N. Y. Mallet & Handle WKS), dis 3 otton (Humason & Becklev Mfg. Co.)dis 49 j	N.Y.
C) Ce Hi	elt. (new list Dec. 2s. 1870.)	Porce Porce Niles Pie Pie Magie
W	ussel (T. & S. Mig. Co.). rought Staples and Hooks and Staples, dis 70 to 9 "Staples, Stanley's list	Benci
W	hiffletree—Patent dis 40 % ooks and Eyes—Malleable Iron. dis 60 % 10 % Brass. dis 60 % 10 % Horse Nalis.	Baile The S Baile Deflai Plane
A	Nos. 6 7 8 9 10 Nos. 6 7 8 9 10 "Finished, Polished of 270 250 240 290 22 "Finished, Polished of 250 250 240 200 20 C	
1	Pinished} 30 23 31 30 19 18 20 % National, Pointed 35 23 21 30 19 18c dis	Hall's in. Huma Gas P Eurel Russe P.S. 6
R M	Herse Shoes. — Burden	Plu
No Wi Du We Iro	ce Awis. Chisels. dc. American loc Chisel	Stand Johns Pocke Davis'
Ice Kil Co	Pick in Handle	Samso Fletch Vaugh 6 in. Eurek Fru Diasto
An	103' Butcher Knives	E. S Prunit Puli Hot Ho Jap'd Brass
Car	triage (Jap'd Sec. # gross)	Brass Jap'd i
44	Por Jap'd Por Jap'd Plated Por Por	Shade Pun

	Cutiery.	et HMaydole'sdis	Melting-Sargent'sdis 50&10 5
dis 3	Am. Miller Bro.'s Cutlery Co	« A. Rammonds (new list July 20, '80)	Monroe's Patent W dos &con dis to
dis 40&1 dis 45&1 dis 45&1	o \$ The wm. Rogers Mig. Co		
dis 55&1 dis 55&1 dis 45&1	Dog Collars.	Warner & Noble s	Tubular
dis 55&1	g Leatherdis 30	% Wilkinson's Smiths'	Amiterns
dis 55&10 dis 50&10 dis 50&10	Torrey's Rod # dos \$2.10, dis 10	Hand Cuffs and Leg Irons. Providence Tool Co.'s Hand Cuffs, \$15,00 P dox } Leg Irons, \$25 P dox }	Yankee. dis 108.10 % De Beque. dis 108.10 %
als 55&10 Als 55&10	% Gray's " # doz \$1.70, n	Handles.—Door or Thumb Latches—	Convex Reflector
dis 45&10	Gem (Coll → No. 1, Large, Japanned	Nos 0 I 2 3 4 Per dom 80.8e 1.00 I.18 I 35 I.40 dia 55%:	
iis 45&10 iis 45&1:	No. 3, Small (108 2.00)	Bronzed Irop Drop Latches R doz \$0.90 @ 1.15 dis 1	tet Eureka, Tinned
118 55&10	5 Japanned # doz \$2.00 2.50 3.50 Coppered # doz 400 450 500 da 10	### Bronzed frop Prop Latenes w doz \$0.00 @ 1.15 dis \$1 Jap'd Store Door Handles—Nuts. \$2.00 Plate \$1.35 #### Barn Door	SaminisNo. 1, ₩7.00; No. 2, ¥12.00 ₩ doz; dis 45 % Townsend's Patent
lis 45&10 lis 45&10 lis 55&10	S Galvanized# dox 3.50 4.00 4.50 Nickeled# dox 5.50 6.00 7.00	Wrought Chest	Lines.—Linen Fish
114 455.1	No. 5. Screen Door Size # dos \$2.00	Flush Chest dis 60%; Lifting dis 55%;	2
dis 20		Lifting dis 55&1 Saw and Piane dis 45&1 Boynton's Pat. Loop Saw Handles dis 40&1 Centennial Saw Handles dis 2 University Centennial Saw Handles dis 3 University dis 3 University dis 3 University dis 3 University di	Wire Clothes, Galvanizedeach 25 @ 40c net
dis 20	% Sabin's Boss No. 1, \$5.40; 2, \$4.20; 3, \$3.00.dis 50	Brad Awl	Capinet—Eagle Changes made in list price of
dis 35	g Philadelphia	Hickory Firmer Chiset, assorted, # gross \$4.50	Bridgeport) dis 25&2 % A. E. Deits
dis 20 dis 25	Rubber, complete	Socket " large, " 6.00 dle	Langstroth & Crane's List Jan. 1 '27. Round Key, No. ' to 4
dis 25	Drawing Knives.	Fig. assorted, W gross. 2.75	Flat Keydis 33/52/20 \$
dis 70 lis 35&re lis 60&ro	Crossman & No. 1	Patent Auger, Ives'	Yale Lock Co., Flat key
ok ickie		" Douglass' # set \$1.25, n	of "Feiter" or "American". dis 321/42 s Flate
& 10& 10	Dongiass	Parm Door old patterns dis refere	
is 44&10	Oritis and Drill Stocks.	Noveity dis 40 Challenge div 50	Branford
dis 70	7 m the ford Booding onch a dr dr	Sterling Improved (Anti-Friction)dis 60&10	Norwich List of June 10, with changes tused a Erwin of Dec. 1, 1880.
w list ne	t Hotebkissdis ac 5	Kidder'sdis 40	Reading Hardware Co
18 60&10	" Miller's Faitseach \$2.00, dis 25 9	Henshaw'sList of 114 changed to 14 co. dis ss @ 60	\$ Padiocks-Mussell & Erwin
. dis 20		Judd's " " 14.00, din 55 @ 60 Fitch's (Bristol) " 14.00, dis 55 @ 60 Rotchkins'	
110 2585	* Whitney's dis 20 9 * Weston's dis 20 9 Moore's Triple Action dis 20 2 2 9	Andrews'	J. H. McWilliamsdis 50 %
36.50	Whitney's Hand Drill		
o. dis 25	Automatic Boring Tools	Hatchets. Isalah Blood	Penfield Block Works, Lig. Apple & Hickory die so
s. dis 20	Danbury \$8.00, dis 30 %	Claw, Nos. 1 2 3 dos 7.75 8.50 0.25	Ment Cutters. Dixon's (P. S. & W.) Nos. z Miles! Chellenge dox\$14.00 17.00 19.00 30.00—dis 35 %
o dis to	Egg Beaters. W dos. \$2.50 net	munt's dis 15&5	# Herry's Nos. 1 2 3 3 40.00 40.00 dis 35 5
o, dis 10 ; o, dis 55 ; s 20.# 25 ;	Standard	Hunt's. dis 1c2; Shingling, Nos. 1 2 3. \$\pi\$ dos \$7.25\$ \$8.00 \$8.75\$ Claw, Nos. 1 2 3. \$\pi\$ dos 7.75\$ \$8.00 \$8.75\$ Lathing, Nos. 1 2 3. \$\pi\$ dos 7.75\$ \$.50 \$.25\$	Each\$3.00 4.00 5.00 11.00 13.00 5.00 -dis 30 % Woodruff's (P. B. & W.)NCs. 100
8 20.#25 9 8 4(@10 1	Family per gross \$15; per dox., \$1.50 net	Burd's	# dos \$15.00 18.00 dis 35 \$
c) dis	Elevator Buckets. Mili E. Buckets, light, 31/2 to 10 in. (Duc's Improved)		Draw Cut Nos 5 2 0 8 10 82 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1
dis	Mill E. Buckets, heavy, s to 10 inches (Duc's Improved)	Shingling, Nos. 1 2 3	American 1 3 4 5 5 Ros. 1 2 3 4 5 5 Each \$4.00 7.00 10.00 \$2.00 \$0.00 \$6
dis 7% 5	Storehouse, Duc's Patent) 12 to 17, \$19.00 @ \$10.20 net Kmery and Emery Paper.		Kiener's No. 54
dis ros	Genuine Chester-Regular Nos B	Claw, Nos. 123# dos 9.00 0.50 10.00 Lathing, Nos. 123# dos 8.00 8.50 9.00	Bilver & Deming
750 net	Washington Mills-Regular Nos	Broad, Nos. 1 2 3 4 \$\pi\$ doz 6.00 10.00 12.00 14.00 \$\pi\$ Nos. 5 6 7 8 \$\pi\$ doz 16.00 18.00 20.00 22.00 Collins	# dos
dis 20 %	H Flour	Collins	Am (ad amatten) non among a blad- a-
dis to S	Plone and FP " B a .c.	Hay Knives.	Lathrop's
.dia to %	Wellington Mills, Grain 10-lb, cans. # B 90 Wellington Mills, Grain # B 10c net Flour # B 8c net Hampden Emery Grain 5c net	"Lightning" # dos \$20,00 ne Wadsworth 8dis 33/4	t Cowies Hdw. Co
dis 30 dis 35 % dis 25 %	Hampden Emery Grain	Hinges. Gato, Western	Sternins Patterndis
dis 25 %	Enameled and Tinned Ware- Kettles	" N. E D dor \$10.13. dia 6: dis	Chase's Hard Metaldis 406 to %
35&10 %	Sauce Pansdis 30 \$	" N. E. Reversible	
35820 3	Escutcheon Pins.	N. Y. Siate \$ 400 \$00.0 dis 60; N. Y. Siate \$ 400 \$ 500.0 dis 60; Automatic \$ 400 \$ 20.5 dis 40; Common Sense \$ 610 \$ 600 \$ 600 \$ 600; Seymour's \$ 610 \$ 600; Seymour's \$ 800 \$ 600; Seymour's \$	Boss, No. 1 2 3 4 4 5 5 5 5 5 5 6 5 6 5 6 6 6 6 6 6 6 6
65&10 \$ 65&10 \$	Brassdis 45 %	" Seymour's	Bronze "dis 45&10 %
	Escutcheons. Door Lock	Rolled Plate	Nuts and Washers,
dis 40 %	Wood dis ss %	Rolled Raised	Hexagon Nuts
dia 35%	Paueets. die 90 5 Fenn's Cork Stops. dis 11/4 5 Star dis 25/5 Star dis 2	Strap (14 to 36 in., \$4.50 # 100 B / dis 10 %	Nut Crackers Table (Humason & Beckley Mfg. Co.)
is 331/2 % soc net dis 45 %		14 in. & up. 5.50 # 100 \$ 3 dis 10 x	Turner & Seymour Mfg. Codis w \$
* cottos	West's Patent Key. dis 45 % Metallic Key, Leather Lined dis 50 % Cork Lined. dis 70 % Enterprise (Self Measuring). \$\P\$ dos. \$\P\$36.00, dis 25 %	"Providence" (over 12 in. \$4.20 % 100 h (data 10 h	Oakum.
foc net	Enterprise (Self Measuring)	Wrought Strap and T, list Dec. 20, '77 dis Hoes.—Riveted Shankper des, \$5.00; dis 35 \$	Ollers.—Zinc and Tin
Took net	8641	Socket	Malicable (Hammer's) * doz \$5.00, dis 10 \$ Prior's Patent or '' Paragon Zinc dis 20 \$
64R4 S	Files. \$6.00 to £. dis 35 \$\frac{1}{2}\$ Arcade. \$5.00 to £. dis 30 \$\frac{1}{2}\$ Black Diamond, new list. dis 30 \$\frac{1}{2}\$ E. M. Boynton's. new list. dis 25 \$\frac{1}{2}\$ Nicholson Nicholson List dis 26 \$\frac{1}{2}\$ Madden & Cockayne File Co dis 20 \$\frac{1}{2}\$ Madden & Cockayne File Co dis 20 \$\frac{1}{2}\$ Heller & Heros new list. dis 20 \$\frac{1}{2}\$ Hugox File Mg, Co., new list. dis 20 \$\frac{1}{2}\$ A Blow Carr 4.50 to £.	Di-t-	Olmstead's, Tin and Zinc
65&10 % 18 22% & 65&10 %	E. M. Boynton's new list, dis 25 % Nicholson	Planters die 36 8 Scovill Pattern, Handled die 20% 10 5 Scovill Pattern, Handled die 20% 10 5 Hick's Pat. Solid C. S. Pianters'. die 20% 10 6 Scovill Pattern die 20% 10 3	Broughton's, Zincdis 40 %
65ETO S	Heller & Bros new list)	Winsted & Lane, Planters	Ox Bails
65&10 % 65&10 %	Johnson & Bro	Hooks.	Pencilis. Faber's Carpenters'
65&10 % 65&10 %	Solution a Solution	Bird Cage, Sargent's list	Dizon's Carpenters' dis 40 & re 5
04&10 s	Moss & Gamble	Cotton (Humason & Beckley Mfg. Co.)dis 40 \$	N. Y. Beiting and Packing Conew list net
6 @ 40 & 1.25 to 1.00 to	Limet & Co. (French)	Beit. (new list Dec. 24, 1870.)	Dison's Carpenters'. dis 40 & 10 % Packing, Steam. N. Y. Beltung and Packing Co new list net Picture Nails. Brass Head, Sargent's List. dis cokro & T. & S. Mfg. Co dis 40 % Porcelain Head, Sargent's List. dis cokro & Jud's List. dis cokro & Jud's List. dis 20 % Porcelain Head, T. & S. Mfg. Co dis 40 % Porcelain Head, T. & S. Mfg. Co dis 20 % Procelain Head,
5.25	Fluting Machines. Knox, 4-inch Rolls		Porcelain Head, T. & S. Mfg. Co. dis 50&10 \$
dis 20 % dis 20 %	Fluting Machines. Enex, 4-inch Holls	Clothes Line Sargent's list	Niles' Patent
dis 15 %	Peerless, 4-inch Rolls 4,00 each net	Harness, Keading listdis 20210 \$	Magic
15&10 % baleic %	Page at (inch Boli do se die to 6	Picture Hooks, Brown's Pat. Solid Brass, \$4 per	Crown Plaiting Machines
dia 30 %	Eureka, No. 1, 7-inen Roll	Coat and Hat, Sarkent's 1885 Reading	Bench, First Quality
40&10% 45&10 %	Eureka, No. 1, 7-inch Roll	"Staples, Stanley's list	Astor Platting Machine. each \$15.00, feet Crown Platting Machines (in. 80.00, colin. 81.00.0803) Planes and Plane Irona. Blaco.0803 Planes and Plane Irona. Benco. 1818 (1818) "Second (dis 208) Moulding. dis 28 5 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
8 3334 %	American, 5 in., \$3;6 in., \$3.40;7 in., \$4.50 each, dis 10 % Domestic Fluter	Us 406/45 Us 406/45 Us 406/45 Us 406/45 Us 40 S Us 40	Bailey's "Victor"
35&10 S			Plane Irons, Butcher's
	Shepard Hand Fluter	Nos. 5	Piane Irons, Butcher's
8 40 %	*** No. 50, \$6,00 No. 110, \$7,25; net ***No. 100, \$60.00 No. 110, \$7,25; net Clark's Hand Fluter ** Clark's Hand Fluter and Sad Iron *** dos \$1,00, dis 20 \$5 Combined Fluter and Sad Iron *** dos 10,00, dis 10 \$5 Buffalo ***Doo, dis 10 \$5 ***Hos 100, dis 10 \$5 **Hos 100, dis 10 \$5 ***Hos 100, dis 10 \$5 **Hos 100, dis 10 \$5 **	Polished or Blued " gre a6c a6c a5c a4c aac	Ohio Tool Co
35Æ5 K	Buffalo	A C 60 50 40 50 27 25 23 22 21 21 20 200 die Nos 1 2 3 4 5 6 7 8 9 10 1 12 11 5	Piters and Nippers. Button's Patents. Button's Patents. Gis 334 4 Et al. (1997) Gis 334 4 Et al. (1997) Gis 345 4 Et al. (1997)
net	Forks. Hay Manure and Sp:/ling	H. P. Pointed and 36 23 27 20 19 18 dis	5 in. \$20; No. 4. 7 in., \$30 ♥ dos
lis 25 %	Hay, Manure and Sp.Aing	National, Pointed 25 23 21 20 19 18c dis	
ila so S	Fruit and Jelly Presses. Enterprise Mfg. Codis 25 \$	Herse Shoes.—Burden	Eursell's Parallel
lin 55 %	Americandis 20 %	Mule Shoes P keg \$37%	Plumba and Leveis. Disston's
18 44 %	Burnished, list as foltows	American lee Chisel	Disstors
50855 50855	"Aome"	Ce Awis, Chisels, &c. \$\psi\$ doz, \$\pri\$, \$\pri\$ doz, \$\pri\$, \$\pri\$, \$\pri\$ doz, \$\pri\$,	Non-Adjustable dis 5,210 \$ Standard Rule Co.'s New Adjustable dis 50270 \$ Non-Adjustable dis 50270 \$ Johnson's Patent Adjustable dis 50270 \$
lis 60 %	Gauges, Stanley's	Wood Head Picks, Sargent's 7 dos \$1.85, discontrol: 5 fron # dos 1.85, discontrol: 5	Davis' Inclinometersdis 6c#10 %
18 25 % 18 50 %	" Chapin's dis 50\$10 \$ Wire dis 10\$210 \$ " Disston's dis 20 \$	toe maliets Fick in Head	Post Hele and Tree Augersdls 30 % Post Hele and Tree Augersper dos \$57.50, dis 30 % Fletcher Post Hole Augers 7 dos 35.00, dis 30 %
@ 20 S	"Ree " Gimlets Remove Proce dis section	Combination Ice Tools	6 in. \$22.60: 7. 8 and o in. \$25 per dos.
4336 % lis 25 %	Eureka Gimletsdla co \$	R etties.	o in. \$20,00; 7, 8 and 9 in. \$24 per dosdis 10210 % Eureka Diggers @ dos. \$40.00dis 25210 % Pruning Hoeks and Shears. Disston's Combined Pruning Hook and Saw
335 \$	Double Cut Shepardson's	Enameled	Pruning Hook per doz \$10.00, dis 20 %
B 81/a	" Douglass' dis 50 5	K nives, Ames' Butcher Knives	Fruning Hook Per doz \$19,00, dis 20 \$25,00 \$
n 8140 n 6140	### Fets	Kalves. Ames' Butcher Knives dis 20 4 "Shoe dis 15 5 Bread do dis 20 4 Bread W dos 21 5 Bread Bread Knives dis 20 5 Hay and Straw—i Wadswortn's dis 33/5 8 Table and Focket See Unitery	Hot House and Tackiedis 60&10 %
10 10 20	Grindstone Fixtures.	K nobe	Brass Screw
is so %	Sargent's Patent dis 70&10 %	Knebs. arriage (Jap'd Sec. # gross)	Brass Screw dis Socio S Jap'd Bitle dis Socio S Glothes Line dis Socio S Hay Fork Solid Eye, \$4.50; Swivel, \$5.50, dis socio S Anti-Friction, 57.50 dis socio S 1
@ 50 %	Gun Wads. U. M. C. B. E. 11 up	temacite Door Knobs	"F" Common and Pat. Bushed
is 25 % is 25 % is 25 %		Bare discounts sa Door Locks, Por	SHADE MACK
8 25 %	P. E. 11 up	orniture, Plain	Punches. Pdos \$2.00: ast; asc, dis co \$ Bemis & Call Co. S Cast Steel Drive
ns 14 %	Dialtors.	cture (T. & S. Mig. Co.)	Spring W dos sprice dis soit s Leach's Patent dis 15 Bemis & Call Co.'s Spring and Check: dis 46. Soild. Tinners' & 600 St. 31, dis 46.
net i	Borse and Cattle Ties, Covert's dis 508	lemacita Picture	Solid. Tinners' die 40 5

January 20, 1881.	
Rail. Railing Door Wrought Brass B 5/90 dis 20 f	Shovels and Tongs.
## Tron, Painted . # foot roc. data 50% of the State S	From and Brass Head, R. & E. list dig so&tc& Polished Steel
for N. E. Hangers— Small, Med. Large. Per 100 feet	Sintes. Square Frames
J. R. Torrey Razor Co	Irondis 4
Genuine Emerson	Hailev's (Stanlev R & L. Co.) new list. dis 20&1 Stearns' dis 20&1
Genuine Emerson dis 4¢655 Badger's Emerson dis 40 Badger's (not Emerson) dis 30 Evans' dis 40 Initiation Emerson \$\psi\$ doz \$\frac{2}{3}\$ Initiation Emerson \$\psi\$ dis 20 Initiation Emerson \$\psi\$ dis 20 Initiation Emerson \$\psi\$ dis 30 Initiatio	Spoke Trimmers.
Chapman Saunder's Saunder's Gis 10 % Torrev's Gis 20 %	Douglass'\\ dos \\$9,00. dis 1 Spoons.
Iron and Tinned	Basting disc Riveted Table and Tea disc Solid Table and Tea disc
## 1.00 ## 1.0	The Wm. rtogers Mfg. Co. dis 40%5% Reeg & Barton dis 40%5% Hall & Elton dis 40%5%
Rivet Sets.	Holmes, Booth & Haydens. dis 40 % & German Silver. dis 20 & 10 & 33
	Tin (P. 8. & W.), Feas. \$1.35 \(\) gross, 1 Tables. \$2.00 \(\) gross, 1 Tin Cowles Hdw. Co.)
Sarn Door, Sargent's list. dis cox 105 Novelt's dis 105 N	Spoons Rasting dis c
## inch and larger # 15 13/40 ## inch and larger # 15 13/40 ## inch # 15 14/40 ## inch # 15 14/40	Hindostan Hacker Stone? gross \$12.00 dis 1 Sand Stone? 5 5 6c dis 23/4&:
Tar'd kope	Washita Stone. No 1, # 15 150: 10 No 2, # 150: 11 Slips No 1, # 16 400:
signi sinch and larger with the significant significan	Arkansas Stone No. 1, 4 to 6 in 5 # \$1.35 in No. 1, 6 to 9 in 5 # \$2.00 it Turkey Oil Stone (Chase) 4 to 8in, \$1.00 \$1
Hay Robe. Boxwood. Rules. Chaplin's. Standard. Standard. Standard. Standard. Stanbey. Chaples. Chaples	" Slips "
Stantey	Court Disease
Rephens. Rad Irons. From 4 to 1c lbs. From 4 to 1c lbs. From 5 local lbs. From 6 lbs. Fro	Stove Polish Figross \$5.70
Gleason's Shield and Töllet	
Enterprise Star Irons	Stell
Sand Paper. Badder & Adamson's Flint, oo to 1½\$4,75 \(\times\) ream 1	Try Squares and T Beveis dis con Disston's Try Square and T Heveis dis Winterbottom's Try and Mitre dis 20&1
## Emery. # ream \$6.50 @ 11.40 Barteles Flint, same list as B & A	Tincts, Brads, &c. List of April 2. 1880 Tinned Swedes Tacks
New England, same list as B. & A. Flint dis 20@2; % Gage's	Swedes Tacks, all kinds dis 30 5 Copper Tacks and Nails dis 30 5 Swedes Hungarian Nails dis 30 5
Sace's	Winterbottom's Try and Mitre. dis 20&1 Tackins, Hradas, dic. List of April 2, 1850 Tinned Swedes Tacks. dis 45 % Tinned American dis 5, % Swedes Tacks, all kinds dis 25 % Copper Tacks and Nalls dis 20 % Swedes Hungarian Nails dis 30 % American dis 30 % American dis 30 % American dis 30 % Finishing Nails dis 25 % Trunk and Clout Nails dis 25 % Trunk and Clout Nails dis 25 % Frush Tacks. dis 20 % Erush Tacks. dis 20 % Leathered Carpet Tacks. dis 20 % American dis 25 % Cigar Box Nails. dis 25 % Cigar Box Nails. dis 25 % Chair Nails. dis 25 % Couble-Pomted Tacks dis 26 % Chair Nails. dis 26 % Tap Borers. dis 400 Tap Borers.
White Cotton. We be foot, dis 10 % Drab Cotton. We be foot dis 10 % Raw Hide. dis 25 %	Trunk and Clout Nails
Steel Ribbon	Brush Tacks. dis 20 \$ Leathered Carpet Tacks. dis 20 \$ American Cut Tacks. dis 25 \$ Cifery Roy Nails dis 25 \$
Ferguson's. Oct Walker's. Oct Hammond's Window Springs. dis 2 s Hammond's Window Springs. No. 1. \$10.00: \$ gross. dis 15 \$	Chair Nails
Walker*. dis 24 5 Hammond's Window Springs. No. 1, \$10.00; \$\tilde{g}\$ gross. dis 15, \$ Northup Window Springs. No. 1, \$10.00; \$\tilde{g}\$ gross. do net The Periecs, Clark & Smith, Plain Jap'd \$\tilde{g}\$ gro \$1,00 net Por. Knob Jap'd \$\tilde{g}\$ gro 14,00 net Nickel-Plated. \$\tilde{g}\$ gro 27,00 net	Common and Ring
Sash Weights, -Sould Eyes, in 500 B 1018	Tones, Measuring.
and over. Mnuage Staffers or Fillers. Mles	American dis 2
Praw Cut.No. 4. dia 25 & Silver's. dia 25 & Silver's.	Tin Case
Saws. Disston's Circular. dis 42 % Mill. dis 40 %	Tobacce Cutters. Enterprise Mfz. Co. (Chambion) Enterprise Mfz. Co. (Chambion) Wood Bottom W dos 812.00. dis 408 All Iron F dos 89.50. dis 408 Nashua Lock Co.'s. W dos 815.00. dis 508 Tee Calks.—Winsted. W B 90. dis
Hand, Panel, Rip, &c	Toe Calks.—Winsted
Billet Webs, 30 in. dis 25 % Idghtning Buck Saws X Far. dis 25 % Lightning Hand, Panel and Rip. dis 25 %	Tinners' Tools and Machines. Machines (P. 7. & W.). list add : Tools (P. 8. & W.). add Transom Lifters.
Wheeler & Ciemson Mg. Co.'s Hand	Wollensak's Patentdis 3
Silver's Silver's Silver's Silver's	Game. Newhouse " Newhouse Pattern dis 50 20 " Blake's Patent dis 50 20 " Blake's Patent dos holes, 16 " Round Wire. dos holes, 16 " Cage " dos 25, 50, dis 10 " Catch-em-alive dos 25, 50, dis 10 Rat. "Decoy". per dos \$10,00, dis 10
Faw Frames. White, Vermont. Red. Folished and Varnished. Stolist dis, 10&10 \$5,80 \$6,00 \$1,35	Mouse, Weod, Unoker. # dox holes, id
No. of the same of	Rat. "Decoy"per dos \$10,00, dis s
Por dos #3.50@#5.50 dis 10 % Stituman's Genuine	Lothrone Brick and Plastering. dis a Reed's Brick and Plastering. dis s Disston's Brick and Plastering dis 2 Peace's Plastering. dis 2 Peace's Plastering. dis 2 Rose's Brick. dis 3 Rose's Brick. dis 3 Rose's Brick. dis 3 Rose's Brick. dis 3 Rose's Brick. dis 2 Rose's Brick. dis 3 Rose's Brick.
leach's	Clement & Maynard's dis Rose's Brick dis Brades' Brick dis
Eemis & Call Co.'s Lever & Spring Hammerdls 30% 5	Worrall's Brick and Plastering. dis 2 Garden dis 5 Triers.
Saw Section Saw Dept dos. \$11.00; Hand Saw Dept dos. \$0.00	Puter and Cheesedis: Viscolid BoxList of July 1, '79 dis 2
Disston's	"Crown" (A. H. Hildick) 40 to 100 B, 150 r Peter Wrights
" Tea, No, 161. # dos \$15.00 dis 40\$10 \$ Union Platform. \$6.00 dis 45 \$ Fairbanks' dis 20 \$	Garage G
Euffalo Scie Co. diszo&5 % Howe's. diszo&5 % Chatillon's Grocers' diszo diszo diszo diszo diszo diszo diszo %	# Bargent's
Family Universal dis 50 9 Favorite dis 30 8 Turnbull's dis 30 8	" Oval Slide
Scale Beams, Chatillon's list	"Fam'ly." List
#CFRPOTES. Adjustable Box Scraper (S. R. & L. Co.), \$6.50.dis 20&10 S. Box, 1 Handle	** Stearn's dis 2021 Hopkins'
### Record	Richardson's Vise and Anvildis 2 Washer Cutters. Smith's Patent
" (Providence Tool Codis 10 \$	Washer Cutters
Screw Drivers. Screw Drivers. Ouglass Mrg. Co. dis 20&to&to 8 to 8 Disston's. dis 40 5 Disston's Patent Excelsior dis 40 5 Euck Bros Stanley Rule & Level Cos., Varnished Hdls. dis 50&to 8 Stanley Rule & Level Cos., Varnished Hdls. dis 50&to 8 Elack Handles. dis 40&to 8 Sarrent & Co.'a. dis 40&to 8 Each Handles. dis 40&to 8 Eac	Washers See Nuts and Washers.
Stanley Rule & Level Cos., Varnished Hdls. dls so&to & Stanley Rule & Level Cos., Varnished Hdls. dls so&to & Starcett & Co. 'a. Slack Handles. dls so&to & Gay's Double Action Ratchet per doz. 4 fls. \$0.00 c; tin., \$10.20; flin., \$12.00 dls 30 % Cowles Hdw. Co., No. 1 Extra. dls so&to \$2.00 cls. \$1.00 cls	Brass and CopperList of June 10, 1880dis 20 Bright and AnnealedNos. o @ 18, dis 50 @ cc
per doz., 4 in., \$0.00; c in., \$10.20; 6 in., \$12.00 dis 30 % Cowles Hdw. Co., No. 1 Extrs	Nos. 27 de 30, tills 62/6 de 50 Coppered
Nos. 4 and codis 30 %	4 Nos. 7 to 18
Flat H'd Iron	Tinned Broom Wire, Nos. 18 to 25. dis 47% 6 50 Annealed Fence, Pos. 8 and 9 . dis 508 55 Grape, Nos. 10 to 14. dis 50 625
brass and Silver Capped. dis 40 % Japanned, list of Plain Screws. dis 30&1c % Coach Patest Gimlet Point, List per 100. dis 60 %	No. 12 and 11. W B 1 No. 12 and 12. W B 10 No. 12 and 13. W B 10 No. 12
Coach, Common dis 60&10 % led dis 10 % dis 10 % Machino, Flat Head, Iron, Am. Berew Co dis 60 % 10 % dis 60 % d	"Staples, Galvanized
Coach, Common. dis 60&70 % level dis 10 % Machine, Flat Head, Iron, Am. Screw Co. dis 10 % Machine, Flat Head, Iron, dis 57 % dis 65 % dis 10 % Wood, Beech dis 55 % Wood, Beech dis 25 % dis 20 % d	Japanneo Baro Funce. W B Galvanized B B It Steel Music Wire, Nos. 12 to 27. W B B 1.2c. in Turner & Seymour Mfg. Co., Picture Wire, dis 80x20 Judd's Picture Wire. dis 80x20 Clothes Line Wire. Galvanized & cold 366x20 R Wire Cloth, green and drap. W sq. ft, 3½ c new Wire Cloth, green and drap.
Hand Hall, Sargent's	Clothes Line Wire, Galvanized w coll 360c.20 Wire Cloth, green and drab sq. ft, 3/4 c ne Wrenches.
and the second of the second	American Adjustable
R. B. Hugunin's	Ooes 'Genuinedis sc "Mechanics"dis 50&10 Fattern, Malieabledis 70&10
Rogers, \$2.50	Oces 'Genuine dils ac 'Mechanice' dils oces 'Mechanice' dils oces Girard Standard dils jockto Girard Agi des oces Bemis & Call's Patent Combination dils so "Serrick's Pattern dils so "Serrick's Pattern dils so
American (Cast) Fron. dis 70 % Clipper Cast Iron. dis 70 % Clipper Cast Iron. dis 70 % Fruning. see Pruning Hooks and Shears. Barnard's Lamp Trimmers. Ø doz \$3.75	" Merrick's Pattern dis 55 " Brigss' Pattern dis 55 " Cyfinder or Gas Pipe dis 40 Van Wagoore & William's Basin ber dox 84 Alken Pocket (Bright) 66,00 dis 60x10 The Favortte Pocket (Bright) per dox 8, dis 50 Wobster's Pat. Combination 61 34 Wringers.
linners dista	Alken Pocket (Bright)
Tinners' d1 16 5 Seymour's List, Nov. 25, 1879. d36 6 5 Beinsch's d36 6 5 Tailors' Shears d36 4 336 5 Mass, Cutlery Co. St. Trimmers d38 75 5	Wringers. Universat, XX No. 216. Per doz
Shenves. 8liding Door, M. W. & Co., list	No. 14
Siding Door, M. W. & Co., list	Webster's Pas. Combination dis 24 Wringers. Universat, XX No. 2½
Moore's Anti-Friction. dis 4.5 5liding Shutter. R. & E. list dis book of 2.5 "Sargent's list. dis 5.810 S Moore's Anti-Friction (Hanging) dis 4.5	No. 1 51.0 54.0 60.0 No. 256, with Cogs. 60.0
Shovels and Spades. Ames, New list, Jan. 26, 1880	No. 3, 71.00 Unique, No. 0. 4, 4 50.00 Value, No. 0. 4, 4, 4, 50.00
Shevels and Spades. dis 121/4 Ames. New list. Jan. 26, 1880. dis 121/4 Bussey Binns & Co., Patent. dis 15 Association List dis 5 Old Colony dis 121/4 Remington's (Lowman's Patent) dis 24 Gle 40	Eureka, No. 2. 54.0 Novetty, No. 10, with Cog Wheels. 50.0
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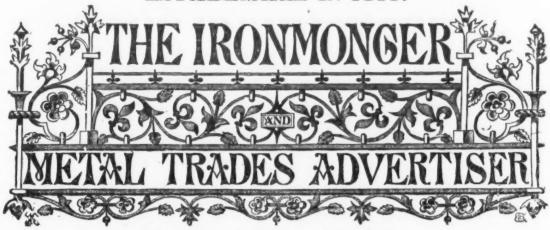
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This is an annual, presented free to every subscriber to the IRONHONGER AND METAL TRADES' ADVERTISEM. It contains a large number of ruled skeleton pages for diary and other entries, and in addition much useful reference information, varied from year to year. It is handsomely bound in cloth, gilt; and as copies are used in thousands of establishments for a whole year, it is obviously a medium of exceptional value for advertisements. Sold to non-subscribers at 75 cents.

THE FOREIGN SUPPLEMENT

is published every fourth week in connection with the extensive and world-wide circulation of the Ironmonger itself. The dates of its publication for the next twelve months will be as follows:

FEBRUARY 5, MARCH 5, APRIL 2 and 30, MAY 28, JUNE 25, JULY 23, AUGUST 27, SEPTEMBER 17, OCTOBER 8, NOVEMBER 5, DECEMBER 3 and 31.

This Supplement is published in

FIVE LEADING COMMERCIAL LANGUAGES

of the world, including English, and is sent to all the countries where they are spoken, thus placing the contents of the Ironnonger not only within reach out in the native language of eighty millions of German, forty-two millions of French, twesty-eight millions of Italian, and fifty-one millions of Sparsial speaking people; or, in all, over two hundred millions of inhabitants in the principal nations where the best purchasers of manufactured goods are to be found.

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THE WHOLE FOREICN HARDWARE TRADE.

to far as our experience of twenty years is our erned, will be covered by The Fourier Suprimental each twice a year. Thus a Price List of Advertuse near teached in the Frontonger and Fourier Supriment is a strikingly powerful and most efficient way of building not to be compared with any of the other ordinary channels of communication.

John T. Lewis & Bros. No. 281 South Front St. PHILADELPHIA.

CEW18

BRAN

TRADE MARK.

Pure White Lead, Red Lead, Litharge,

Orange Mineral, Linseed Oil, AND PAINTERS' COLORS.

Brooklyn White Lead Co.

B. KREISCHER & SONS,

Established 1845. Office, foot of Houston Street, East River.

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Stove Linings,

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Woodbridge, - - - N. J. BORGNER & O'BRIEN,

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Edge Pressed Furnace Blocks, Twenty-third Street,
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Twenty years' practical Experience.

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Clay Retort and Fire Brick Works, (EDWARD D. WHITE & CO.)

Manufacturers of Clay Retorts, Fire Brick, Gas House and other Tile. VAN DIKE, EL ZABETH, RICHARDS & PARTITION STS. Office, 88 Van D3 ke 8t., Brooklyn, N. Y.

WATSON FIRE BRICK CO.,

ESTABLISHED 1836. ecessors to JOHN R. WATSON, Perth Amboy, New Jersey. Manufacturers of

FIRE BRICK,
For Rolling Mills, Blast Furnaces, Foundries,
Gas Works, Lime Klins, Tanneries, Boiler
and Grate Setting, Glass Works, &c.
Fire Clays, Fire Sand, and Kaolin for Sale.

HENRY MAURER, Excelsior Fire Brick & Clay

Retort Works, BRICK AND CLAV RETORTS.
WORES: PERTH AMBOY, NEW JERSEY
Office & Depot, 418 to 442 East 23d St., N. Y.

TROY FIRE BRICK WORKS,

JAMES OSTRANDER & SON,

FIRE BRICK,

Established 1864.

GARDNER BROTHERS

STANDARD SAVAGE FIRE BRICK, TILE & FURNACE BLOCKS.

Clay Gas Retorts and Retort Settings, and Miners and Shippers of Fire Clay. Oppies: 116 Smithfield St., Pittsburgh, Pa. Works: 81t. Savage Junction, Ad., and Lockport, Pa.

HALL & SONS,

FIRE BRICK,

Buffalo, N. Y. GEO. H. CREED,

SHIP CHANDLERY, 103 Reade Street, New York. Manufacturers of and Wholesale Dealers in

Cotton and "Long Plax" Sail Duck, Cotton and Linen Ravens, Creed's Patent Ships' Clews. Heitman's Wire Rope Spitoers. Agent for Raymond's American Crane Oil for lubricating Cylinders and Valves.

WILLIAM H. AINEY, Mellert Foundry & Machine Co. (Works Established at Reading, Pa., in 1848.) Manufacturers of

MARINE VILLE TO THE STATE OF TH ARNOLD MELLERT, Supt., Reading, Pa.

FIRE BRICK. HENRY DISSTON & SONS, BEST AND CHEAPEST. HENRY DISSTON & SONS,

KEYSTONE SAW, TOOL, STEEL & FILE WORKS,

Front and Laurel Streets,

PHILADELPHIA.

The cut shown herewith represents our

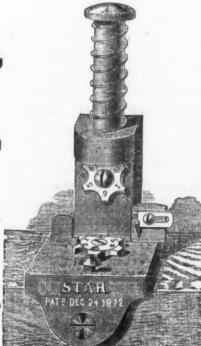
which is unequied for simplicity, durability and accuracy in

Setting all kinds of Hand Saws, Web Saws, Wood Saws, Back Saws.

We guarantee this tool to do the work for which it is intended, if properly used; if it does not, the money will be refunded and the tool can be returned at our expense.

We have long felt the need of a Saw Set that would set CLAY RETORTS, TILES, &c., the teeth of a saw without breaking, and at the same time can be worked by anybody.

> In the Star Set the same principle is involved as is used in our works for setting saws.



JOHN JEWETT & SONS. Manufacturers of the well-known brand of WHITE LEAD.



White Lead, Red Lead & Litharge.

No. 182 Front Street, NEW YORK,

LINSEED OIL. 182 Front Street, NEW YORK.



TRADE MARK. The Atlantic White Lead and Linseed Oil Co.,

White Lead (Atlantic), Red Lead, Litharge & Linseed Oil. ROBERT COLGATE & CO., 287 Pearl Street, New York.



DUNBAR BROS., Manufacturers of

Clock Springs and Small Springs BRISTOL, CONN.

"VALENTINE'S" PATENT

FELT WEATHER STRIP. For keeping out Cold, Wind and Dust, The best, most durable and cheapest Strip in the market. It is not a ected by the weather, does not become hard and brittle in old or melt in warm weather. Sambles and Frice Lists sent tree by mail.

W. T. VALENTINE. Sole Manuf'r and Patentre, Albany, N. Y.

THOMAS MORTON, 65 Elizabeth Street, New York, Manufacturer of Copper and Iron SASH CHAINS, With Patent Attachments.

Warranted for years. Chains of any size made to order, and trade, surplied with liberal discount.

are the most simple, most effective and most convenient en having shows their great popularity and superiority.

There never was a Spring made that is so durable, so complete in its action, operating with a uniform pressure, holding the door tight when closed, and allowing it to open without increasing the pressure at any point.

When the door is opened about 130 degrees of a circle, it will press and hold it open, The Spring is easily unhooked and rehooked—in an instant—from the door and also from the jamb, without removing a screw or pin.

This is a Convenience Possessed by no other Spring in the Market.

We are making this season three sizes, viz : No. 1 For Screen or Light Storm Doors. No. 2 For Medium Doors.

No. 3 For Heavy Doors. They are for sale by most of the prominent jobbers of the United States and Canada Correspondence solicited.

WITH PATENT ADJUSTABLE ATTACHMENT. The only Saw that can be adjusted for either a One-Man or a Two-Man Saw, We make the following lengths, 31/2, 4, 41/2, 5 feet. Send for sample.

WHEELER, MADDEN & CLEMSON MFG. CO., Middletown, N. Y.



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A. J. DAVIS & CO., **Patent Friction Hoisting Engines** For Mines, Quarries, Dock Building, &a. MANUFACTURERS OF

SHAPERS, DRAIN PIPE MACHINES, BAG AND SATCHEL MACHINERY,

Steam Engines, Wire Drawing Machinery, &c., &c. 69 N. J. R. R. Avenue, Newark, N. J.

The Farrel Foundry and Machine Co.





ANSONIA, CONN., ROCK & ORE BREAKERS, (THE "BLAKE "STYLE), med for breaking to smal s and one-third dust all kind

of hard and brittle substances, such as Quartz, Emery, Gold and Silver Ores, Coal, Plaster, Iron, Copper and Lead Ores; also, Stone for making Concrete and Railroad Stallast, at lest, at House and Abroad, has proven this machine to be the best on Mr. S. L. Marsons, for the past fifteen years connected with the manufacture of the decompant of our works, and will personally superinten, their ereproces. Mr. S. L. MASSOEN, for the past lifteen years connected with the manufacture range of this department of our works, and will personally superintent their erectivits. Chilled tholls and it olling Mill Machinery; Power Process, single Hammers, Drops and Lifters: Shafting, Pulleys and Hangers.

Corrected Weekly by Lloyd, Supples & Walton.) Terms, 30 days. For 60 or 90 days, interest added at 16 per cent. per annum. Anvils. Peter Wrights. # B	
Terms, 30 days. For 60 or 90 days, interest added at 10 per cent. per annum. Anvils. Peter Wrights. # B	Flat Head Iron Brass Round Head Brass. Iron .
Anvils. Peter Wrights. \$ \$	Spoons. Plated German Silver. Britannia, Boardman Tinned Parker's
A pole Parers. Keystone Centennial, 1875	Britannia, Boardma Parker's
	Philadelphia; in Chatfield No. 1, 82,7 Gem Coil No. 1, Lar No. 2, Med No. 2, Small
Reading No. 72	Gem Coil No. 1, Lar No. 2, Med No. 3, Sma
" No. 78. 7.50 Rotary Peach Parers. 12.50 Lots of 10 to 24 dozen special prices	Stocks and Dies Stove Polish Ger
A Kes. Hunt's Kentucky and Yankee	Dixon
Beveled Axes add 50c net Double Bit Axes net 23.00	Traps. Genuine Oneida-N
Augers and Auger Bits.—New List January i Bates' Nut Augers. dis 40 % COOK'S Augers. dis 40 % Wateraus' Shin Augurs	Im. Oneida—Newho Vises.—Solid Box, T
Benjamin Pierce Auger Eits dis 55 Griswold Auger Bits dis 56 Griswold Auger Bits dis 50 Cook's dis 200 Cook's d	Wrenches.—Agricu Coes' Genuine " Mechan " Mall. Ba
Jennings' "dis 10, 1 %10 % Bonney's Pat. Hol. Augers, list \$48 ≥ dozdis 24&10 % Stearns' Pat. Hol. Augers, list \$48 ≥ dozdis 20&10	Philada. Tool Co., I Wire. Bright or Ann'd. N
Likit and Common	Coppered, o to 18 Tinned Broom Wir
Swiss Pattern Hand Bells low list dis porto S Connell's Door Bells low list dis porto S Gt. Western & Kentucky Cow. new list dis 25 S	Gaivanized No. 7 to Wringers. Peerless No. 21/2
Bella, Bevin Bros. Mfg. Co. Light Hand Belladis 60&10 % Swiss Pattern Hand Bellalow list dis 10%10 % Connell's Door Belladis 35 % Gt. Western & Kentucky Cow, new listdis 35 % Belt and Rivet ('Hippers, Chambers' No. 1, for % bolteach, \$7.40 / 10 No. 3, 1 % 1 9 00 dis 15 %	Universal, No. 214.
Boring Machines. Upright, without AugersList 5.50 dec.	Novelty, No. 10
Boring Machines. Upright, without AugersList 5.50 dis 40 % Angular, without Augers	PIT
Stanley, Wrought Shatter dis 50410 %	TERMS.—Note or ac rate of exchange on cent. for cash, if ren
Sport	
American Ball.	134 to 4 by 36 to 1 is 434 to 6 by 36 to 1 134 to 6 by 134 to 136 134 and 136 by 36 to 34 36, 36 and 36 by 36 to 34
Mayer's Loose Joint dis 55210 5	%, % and % by % to % Rou
Table Hinges and Back Flapsdis 45210 % Narrow, Fast	t to 1%
	398 to 4 414 to 5 5 to 36
Parker dis 70 % Clark dis 70 % Shepard dis 60, 10% to % Lul & Porter dis 60% to % Ruffers dis 00 % dis 00 % to stop %	% to 1%
Charms — verman ratter and Coll. new list Oct. 22. 1870. — dis 50 % Galvanized Pump. — dis 50 % Bast Proof Coll Chain — English — b 100 net	Half O
Ruffer's dis os	% to 11% by 5-16 to 36
Socket Firmer	Minch, Nos. 13 and
Casters.—Bod (new list July 1, 1880.)	Inch, Nos. 13 and 11 and 13 and 14 and 14 and 15 and 15 and 15 and 16 and 17 and 18 an
Cutiery.—Walden Pocket new list net Landers, Frary & Clark, J. Russell & Co., Lamon & Goodnow Mr. Co. and Meriden Cutiery Co. Money	316 to 6 by 16 and 5
facturers' prices net. Drawing K nives. Hart Mfg. Co. **	314 to 6 by 14 and 6 116 to 314 by 14 and 6 1 to 116 by 14 and 6 14 to 34 by 14 and 6 14 and 14 by 14 and 6
Adjustable Handle	1% to 6 by 16 to 3-16
Fry Paus. Tinned	11/4 to 6 by 1/4 to 3-1/1/4 to 6 by Nos. 11 1 1 to 13/6 by 1/6 to 3-1/1 1 to 13/6 by 1/6 to 3-1/1 2 and 13-1 by 1/6 to 1/6 2 and 13-1 by 1/6 and 3-1/6 2 inch by 1/6 and 3-1/6 2 inch by 1/6 and 3-1/6 2 inch by Nos. 11 8
Fo 0 1 3 3 4 5 6 7 8 Files Nicholson	% and 13-16 by Nos. % and 1-16 by 14 to % and 11-16 by Nos.
Nicholson	and 9-16 by 1/4 to 1/2 and 9-16 by Nos.
Fluting Machines. Eagle-1/4 in. rolleach, \$2.15 dls 20 fl	114 to 4, Nos. 13, 14 au
Fairing Tacal uses Earle - 3/5 Als so start Start - 3/5 Als so start - 3/5 Als	114 to 4, Nos. 15, 14 at 114 to 5, Nos. 16, 17 and 114 to 2, No. 20. 114 to 2, No. 21. 114 to 2, No. 21. 114 to 2, No. 21. 115 to 2, No. 21. 115 to 2, No. 21. 115 to 3, No. 2
Geneva Fluter	154 to 2. No. 22 15-10, 1, and 156, Nos 15-16, 1, and 156, Nos.
Hammers. Yorkes & Plumb's, now list	15-16, 1, and 154, Nos. 15-16, 1, and 154, No. 15-16, 1, and 154, No.
Hatchets. Yerkes & Plumb, new list	% Nos. 16, 17 and 18, Nos. 19 and 20.
Hinges. Strap and T. Nos. 5 7 8 9 17 Horse Natis. Nos. 5 7 8 9 27 Ausable 7 19 10 and 9 37 37 48 24 27 32 Blued and Pointed. 31 28 2 22 21 32 Globe Now list. 28 24 37 32 21 32 Clinton. Polished & Pointed. 22 20 19 18 17 Potter. all sizes. Discount on Ausable and Clinton, 20 8; Globe, 105 Locks and Kuobs.	74, No. 22. 13-16, Nos. 13, 14 and 13-16, Nos. 16, 17 and
" Pol'ed & Pt'd and Blued and Poloted, 31 25 2 25 24 22 Globe	13-16, No 21
Polished & Pointed 23 21 20 19 19 Porter, all sizes 18 15 19 19 Dacount on Ausabie and Clinton, 20 3; Globe, and	14, Nos. 16, 17 and 18 16, Nos. 19 and 20
Locks and Kuobs. Branford	94, NO. 22 11-16, NOS. 13, 14 and 11-16, NOS. 16, 17 and
Cocks and R. 1008- Branford dis 4,52.55 Gavlord Cabinet dis 2,52.55 American Padlocks dis 4,52.55 Scandinavian Padlocks dis 4,52.55 Flow Standard Standard Standard Flow Standard Standard Standard Flow Standard Standard Standard Flow Standard Standard Standard Flow	11-16, No. 21
9 doz	56, Nos. 16, 17 and 18 68, Nos. 19 and 29 56, No. 21
Lanterns. V doz. \$9.00 not square Candle and Oil V doz. \$9.00 not square Candle and Oil V doz. Tudiar Ano. o. \$8.65; No. 1, \$10.15 V doz not Globes, 34 cents extra per doz. net.	96 No. 23. 9-16, Nos. 13, 14 and 1 0-16, Nos. 16, 17 and
Globes, 35 cents extra per doz. net. Lawa Mowers. — Pennsylvania	9-16, Nos. 19 and 20 9-16, No. 21
Holland PatentList \$5.00 dis to 5	6 inch, Nos. 13, 14 at Nos. 10, 17 at Nos. 10 and
Mattocks. Long and Short Cutternew list Pennsylvania Patternper doz	No. 21 No. 22
Enterprise Mfg. Co.'s Measuring Faucetsdie 24 Stebblns' Gates	Ties. 1-100 per lb. extra
Landers, Frary & Clark & Fetroleum	to specified lengths
Dixon's	o to 11 lbs, per set of 8 lbs, and less than
Hale's new list, dis 10, 2& 10 clast American dis 25 Stuffers dis 35	Extras for Cuttin
Enterprise Stuters	No. 9 and heavier Plow Slabs
Pianes.—Ohio Tooi Co	" Wings
Pianes - Ohio Tool Co	No. 15 to 17
Pianes - Ohio Tool Co	No. 22 to 24
Pianes - Ohio Tool Co	No. 22 to 24 No. 25 & 26 No. 27 No. 28
Pianes	No. 22 to 24
Pianes	No. 22 to 24. No. 25 & 25. No. 27. No. 28. No. 28. No. 28. No. 28. No. 28. No. 28. No. 29. No. 21 to 24.
Mattocks Long and Short Cutter Der doz Dennsylvania Pattera Der doz Pennsylvania Pattera Der doz Pennsylvania Pattera Der doz Pennsylvania Pattera Der doz Dennsylvania Pattera Der doz Dennsylvania Denn	- Valley cold
Programa Trons	- Valley cold
Try squares. Stanley	quality, 37% %. 4% by % by -16 2%, 3, 3% and 4 inch 1%, 1%, 2 and 2% inc
Tyrsquares, Samley. Data of Tyr Squares. Data of Tyr Squares. Seythes, Golden Clipper, Damascus Blade, Boxed and Sharpened. Clipper No. 10, Bronzed Blade, Boxed and Sharpened. Clipper No. 5, Painted Red, Boxed and Sharpened. Sharpened. Sharpened. "dos \$\$.00 ne	quality, 57% %. 4% by % by 4-16 2)4, 3, 3% and 4 inch 1%, 1%, 2 and 2% inc
Tyrsquares, Samley. Data of Tyr Squares. Data of Tyr Squares. Seythes, Golden Clipper, Damascus Blade, Boxed and Sharpened. Clipper No. 10, Bronzed Blade, Boxed and Sharpened. Clipper No. 5, Painted Red, Boxed and Sharpened. Sharpened. Sharpened. "dos \$\$.00 ne	quality, 2786 %. 4% by 56 by 6-16 26, 1, 2% and 4 inch 15, 154, 2 and 35/ inch 15 by 1 inch, for Pi 15 by 3 inch 16 by 3 inch 17 by 3 inch 18 blue, to the yard.
Try squares. Semiley	quality, 2786 %. 4% by 56 by 6-16 26, 1, 2% and 4 inch 15, 154, 2 and 35/ inch 15 by 1 inch, for Pi 15 by 3 inch 16 by 3 inch 17 by 3 inch 18 blue, to the yard.
Try Squares. Stanley	quality, 27% 5. 4% by 56 by -16 2% 3, 3% and 4 inch 1% 1% 2 and 2% inc 1% by 1 inch, for Pl 1% by 34 8 libs. to the yard 8 libs. to the yard 19 by 56 and 48 Spin 2% and 3 by 3% and 48 Spin 2% by 5% and 48 Spin 2% by 5% and 48 Spin
Try Squares, Stanley. Try Squares, Stanley. Disston's Tsurres. Scribes Tsurres. College Clipper, Damascus Blade, Boxed Clipper No. 10, Bronzed Blade, Boxed and Sharpened. Clipper No. 5, Painted Red, Boxed and Sharpened. Sharpened. Sharpened. Clipper No. 5, Painted Red, Boxed and Sharpened. Sharpe	quality, 57% 5. 4% by 56 by -16 1% 3, 3% and 4 inch 1% 1% a and 2% inc 1% by 1 inch, for Pl 1% by 4 inch 1% by 4 inch 1% by 4 inch 2% by 5, and 4 % pi 2% and 2% and 4 % pi 2% and 2 by 5, and 4 % pi 2%
Try Squares, Stanley. Try Squares, Stanley. Disston's Tsurres. Scribes Tsurres. College Clipper, Damascus Blade, Boxed Clipper No. 10, Bronzed Blade, Boxed and Sharpened. Clipper No. 5, Painted Red, Boxed and Sharpened. Sharpened. Sharpened. Clipper No. 5, Painted Red, Boxed and Sharpened. Sharpe	quality, 57% 5. 4% by 56 by 6-16 2%, 2% and 4 inch 1%, 1%, a and 3% inch 1% by 4 inch, for Ph 1% by 54 1% by 1 inch, for Ph 1% by 54 1% by 64 8 lbs. to the yard. 12 12 13 14 15 15 16 17 16 17 18 18 18 18 19 19 19 19 19 19
Typ squares. Stanley	quality, 57% 5. 4% by 56 by -16 2%, 3, 3% and 4 inch 1% by 1 inch, for Pl 1% by 1 inch, for Pl 1% by 34 8 libs. to the yard 19 by 34 8 libs. to the yard 10 8 libs. to the yard 11 by 36 and 4% Spin 2% and 30 lib. Rail, soc 4 3% by 36 and 4% Spin 2% by -5% Flat Rails 1% to 2 by 36 to 36 in 1% by 36 and 75 lib 1% by 36 and 75 lib 1% by 36 and 75 lib 1% by 37 and 38 lib ds. Juniata Nail Bods. Norway Guard Iron. 36 x 36 x

Prows.	No
Fiat Head Iron	Root Ovality Po
Fig. Head Iron dis co 5 Fig. Head Iron dis co 5 Brass. dis co 5 Round Wead Brass. dis a 5 Round Wead Brass. dis a 5 Fig. Head Brass. dis 6 Fig. Head Brass	Square, Flat, Octo \$4 to 2 inches, inclusive \$4 and 2% to 3 inches. \$4 and 3% to 4 7-32 and 4% to 5 \$16 and 5% to 5 \$32 inch
Prings.—Torrey.	% inch. Oil Well Steel Forgings. No grade of Crucible Tooless than above prices. Machine
tocks and Dies	Ordinary Sizes, % to a incl Round or6 and ab to a inches d and ab to 6
	Square, Flat and Octagon list.
rapa, Genuine Oneida—Newhouse	Cut to specified lengths,
Vrenches.—Agricultural. dis o-2:0 5 Coos' Genuine dis 5:5 2 Mechanics' dis o-2:0 Methonics' dis o-2:0 5 Mail. Har. dis o-2:0 5 Philada. Tool Co. Duplex. dis	2 Inches and under
Philada. Tool Co., Duplexdis Vire. Bright or Ann'd. No. o to 18dis 5/to 57% \$ " No. 10 to 26	Best, ad Qua To at gauge, 130 110 10. extra for each additio Cut to multiples or speci
Poliada. Tool Co., Duplex	Miscellaneon
Vringers, Peerless No. 216	Auger and Auger Bit Axle Steel for carriages an Frog Points and Plates Side Bars Plek, plain
Gaivanized No. 7 to 18 Market List, dis 35 to 46 \$ Veringers. Peerless No. 214	Pick, plain "and Mattock, bevelo- skate Sicel. Table Cutlery Pike and Cant Hook. Coal and Granite Wedge Eoller.
PITTSBURGH.	Codmella emblant to Macht-
Merchant Iron. TERMS.—Note or acceptance at 60 days, with current ate of exchange on New York, or a discount of 2 per ent, for cash, if remitted within 10 days from date of	Trap Spring Steel
avoice.	Boiler, Fire-Box and Fine
14 to 4 by 14 to 1 inch 2 so 14 to 6 by 14 to 1 " 2.50 14 to 6 by 14 to 14" 2.50 14 to 6 by 14 to 14" 2.50 14 and 11 by 14 to 14" 2.50 and 11 by 14 to 14" 2.70 15 14 and 14 by 14 to 14 2.50	thick Boiler, Fire-Box and Flue thick Circulars and semi-circula
	ately Smoke Stack, to shape Locomotive Tank Steel File Ca
to 174 2.50 % to 9-16 2.70 10 25 2.70 12 to 7-15 2.00 10 25 2.70 12 to 7-15 2.00 10 25 2.70 10	Square, Round, Half Rot Inch and over
Oval Iros. 10 1/4	Horse and Shoe Rasp Spring of Spiral and Taper, cut to le
Half Oval and Half Round.	Tire Co
to 1% by 5-16 to 3% inch.	1x3-16, %x3-16 and 34. 1 and 13-10x3-6 and 5-32, %x3-4 and 9-x3-6 and 3-32 and 13-30
Inch. Nos. 13 and 14	Fork and Rake, Crucible. Horse Rake Steel, cut to be the Crucible. Corn Stalk Cutter, beveled Bevoled Hoe and Shovel St. Crucible Plow Steel in slaten
13 and 14	Corn Stalk Cutter, beveled Beveled Hoe and Shovel St Crucible Plow Steel in ala Bessemer and
15 to 6 by 14 and 5-16 ivch	spring spiral and taper, cu
% to 36 by Mand 510 "	Sleigh Shoe
1% to 6 by Nos. II and 12	Cutter Shoe, cut to length Scythe Back Steel. Grain Drill Bars Points
74 and 13-16 by Nos. 11 and 13	Thrasher Steel
% and % by % and 4:6	Where Bessemer or Ope in place of Crucible, the c be greater than ic. per il provided in the list.
Hoop Iron. 14 to 4, Nos. 13, 14 and 15. 15 to 2, Nos. 10, 17 and 18. 15 to 2, Nos. 10, 17 and 18. 15 to 2, No. 20. 15 to 2, No. 20. 15 to 2, No. 21. 15 to 2, No. 21. 15 to 2, No. 21. 15 to 2, No. 22. 15 to 2, No. 21. 15 to 2, No. 22. 15 to 2, No. 21. 15 to 2, No. 22. 15 to 3, and 156, Nos. 15, 14 and 18. 15 to 4. 15 to 3, and 156, Nos. 15, 17 and 18. 15 to 4. 15 to 3, and 156, Nos. 15, 17 and 18. 15 to 4. 15 to 5, and 15 to 22. 15 to 5, and 15 to 25. 15 to 5,	Terms.—Four mouths; 3 if remitted within 30 days
14 to 2, No. 21	Furnace, Floor and Straig Housings and Castings no Guide Plates Spindles and coupling bo Sand Rolls and Platons, is "" " " " " " " " " " " " " " " " " " "
5-16, 1, and 134, No. 19 and 20	Sand Rolls and Pinlons, he small Pipe Mill Castings. Rolling Mill Castings und Spur and Bovel Wheels, he spur and Bovel Wheels, he spulled to the spurious statement of the sp
% Nos. 10, 17 and 18	Pulleys up to 30 inches Over 30 inches Engine Castings, light heavy
3-16, Nos. 13, 14 and 15	Engine Castings, light heavy Chille
13-16, NOB. 16, 17 and 15.	6 to 7 in. diam., 7 to 30 il 8 to 15 in. 8 to 40 il 25 to 24 in. 15 to 72 il 14 to 31 in. 72 to 108
6, No. 21. 4.30 4, No. 22 4.40 11-16, Noe. 13, 14 and 14. 4.20	White and Strictly Pure White Lead 500 B and over, 901 less B Tin Pails, 900 W B Pails, 100 B over keg p
11-16, Nos. 19 and 25	Palls. 10 9 B over keg p b ases, 12c. Dry White Lead. less than
Nos. 16, 17 and 18	Orange Mineral, genuine, Red Lead, very brilliant, Litharge (Potter's Lead) Freights equalised with
% No. 23. 4.50 9-16, Nos. 13, 14 and 14	Freights equalized with Terms: Note at sixty da from date of invoice, a dibe allowed, but not other Winde
7-10, No. 22	Per Box of 50 Feet.—Discoude 65 de 20 %
Nos. 19 and 20	Size.
"No. 23. "The prices under Hoop Iron do Lot apply to Cotton	6 X 8 to 10 X 15. 11 X L4 to 16 X 24. 15 X 22 to 20 X 30. 15 X 36 to 24 X 30. 20 X 28 to 24 X 36.
r-roc per lb. extra will be charged for each gauge ighter than the lightest indicated. 1-roc per lb. extra will be charged for outling floops to specified lengths. **Darrel Hoops.**	36 X 46 to 30 X 50
14 to 2 in., cut to length. to 11 lbs, per set of 6 hoops	30 x 56 to 34 x 56. 34 x 56 to 34 x 50. 35 x 60 to 40 x 60. Double Strength.
Extras for Cutting to Length all Preceding Iron. All Iron, including Tire	13 X 14 LO 10 X 24.
No. 9 and heavier	26 X 30 to 26 X 44
Sheet Iron. Charcoal. Juniata. No. 10 to 14. , 5.50 5.00 6.50	30 x 56 to 34 x 56 34 x 58 to 34 x 60 30 x 60 to 40 x 60
No. 22 to 244.90 5 86 7.30 No. 25 & 264.50 6 00 7.50	An additional to per or glass more than 40 inches in length and not inches, will be charged in
No. 28	Durhamville
No. 28	FOX & C
a)4, 3, 3 4 and 4 inch	MINESON
15 by 1 inch, for Plow Handles	Single and
## 179 by ## ## 2.50 20 lbs. to the yard 2.50 25 20 lbs. to the yard 2.50 25 25 25 25 25 25 25	DURHAMY
Brince Joints for 12, 16 and 20-lb. Rail, 40c each; 28 and 30 lb. Rail, 50c each; 40 lb., 50c each. 28 bb. Rail. 44 cc and 28-lb. Rail. 44 cc and 3 by 36 and 3 by 36 " 12 and 16-lb.	In lots to suit buyers. Price lists, estimates, &
25 into 3 07 % 12 and 10-10 44c 23 by 5-16 Flat Rail. 54c 23 by 5-16 Flat Rail. 54c 24 by 5-16 10-16 1	Keystone
14 by 34 and 7-16 inch 3.20 14 by 35, 7-16 and 46 inch 9.50 Juniata Nail Rods 6.54 Norway 8.00 Guard prop. 2434334 and 2435435	17th and
Chand Inon 7/w8/w5/ and 2/w5/w8/	100 1 7011

% and %x54x54... g-16 and 34x54x4

_		_
***	red to 604 \$2.65	
*	Best Quality Refined Cast Steel.	
8 5	% to a finches, inclusive. II 0 5-16 and 3/5 to 3 linches. I/4 0 5 and 3/5 to 4	4
AME	\$\frac{4}{4} \text{ and } \frac{3\frac{4}{5} \text{ to 4}}{6} \text{ is c}{6}	KEN
24.14	532 HCM. 23 6 \$4 inch. 31 C Oil Well Steel Forgings. 21 C	TA
16	Soli Well Steel Fordings. 21 coll Well Steel Fordings. 21 coll Well Steel Fordings. 21 collision of Crucible Tool Steel shall be sold for less than above prices.	2.8.8
7.	Machinery Steel. Crucible. Dessemer & Open Hearth.	422
et et	Round 256c 6c	ATP
2 %	5 to and 25 to 3 inches	4
1%	Square, Flat and Octagon, Mc extra throughout the list.	11.13
3 %	Cut to specified lengths, 14c extra. Hammer Cast Steel.	63.61
200	2 Inches and under 834c Above 2 inches 95c	
3 5	Sheet Steel.—Orucible. Bessemer & Bessemer &	
MAKK	To rigauge 130 110 90 5/50 10. extra for each additional gauge. Cut to multiples or specified lengths, 15c. extra.	
5 %	Miscellaneous Cast Steel	
2 %	Micellaneous Cast Steel. Auger and Auger Bit. Axie Steel for our tages and wagons. Side Bars. Pick plain. and Mattock, beveled. State Steel. Table Cutlery. Pike and Mattock, beveled. Coal and Gant Hook. Coal and Granite Wedge. Spindle, subject to Machinery classification. Sping Steel. Piston Rock, Pins and Lathe Spindles. Side Bars. Side Steel. Side S	1
.00	Pick, plain	
.00	Skate Sicel	
.00	Coal and Granite Wedge	
	Trap Spring Steel 91sc Forged Crank Pins and Lathe Spindles 10%c	
er of	Slide Bars, plain	
	Crucible, Open Hearth or Beasemer.	
.50 .60	Boffer, Fire-Box and Flue Sheets, not less than 3-16 thick. Boffer, Fire-Box and Flue Sheets, not less than 16 thick. Circulars and somic features.	
.00 .00	thick	
ige	stelysmoke Stack, to shape	
.90 1.90	File Cast Steel,	
-30 -40	Square, Roand, Half Round and Flat Bastard, 8- inch and over	
1-70	Spiral and Taper, cut to lengths	
-50	LXM and over	
3. 40	% and %x34 and 3-32 and 12 g	
3.7C	Fork and Rake, Crucible	l
1.00 1.80 1.40	Hoe Crucible	
1 10	Crucibio Piow Steel in slabs. 2 c Crucibio Piow Steel in slabs. 5560	١
2.70	Spring	l
1.00 1.00 3.40	Tire, 3-15 thick and above	l
3.00	Toc Calk 5.5%	l
3.10	Grain Drill Bars	l
3.40 3.50 3.70 3.80	Polling Coulton Months	١
3.80 1.00 1.10	Thrasher Steel. 10%C Thrasher Steel 5%C Teeth 5%C Rolled Hammer Billets 5%C Where lessemer or Open-hearth Steel can be used	I
4.30	provided in the list. per 1b., except where especially	١
3.30 3.40	if remitted within 30 days.	١
3 50 3.50 3.70 3.80	Hells and Castings. Furnace, Floor and Straightening Plates	١
3.40 3.60	Guide Plates	1
3.70		ı
3.70 3.80 3.90	Spur and Bevei Wheels, large 360	١
4.00	over 30 Inches	1
3.90 4.00 4.10	6 to 7 in. diam. 2 to 2 in lone.	١
4.30	8 to 15 in. 8 to 40 in. 19 to 72 in. 4	
4.20	White and Red Lead.	١
4-40	The Dand over, 90; less than 500 b. 9500 th 26 and 60	1
4.50	B ases, izc. Dry White Lead, less than see the Side consequently in	1
1 40	Red Lead, very brilliant, segs, sec; in barrels, 9 c	١
4.70	from date of involvery days, or if paid within is days	ı
4.90 4.60 4.70 J.80		١
1.80	Per Box of to Feet Discount Solito & on single strangel	1
5 10 4 80 4-90	Single Strength.	I
5.20 5.20 5.30	Size. AA. A. B. C.	1
5.40 ton	11 X 14 to 16 X 24. \$3.24 \$7.50 \$7.00 \$6.59 16 X 22 to 20 X 30. 10.75 9.75 17 X 36 to 24 X 30. 12.75 9.75 20 X 28 to 20 X 30. \$8.50 3.50 \$8.75 3.50 \$8.75 3.50 \$8.75 3.50 \$8.75 3.50 \$8.75 3.50 \$8.75	
uge	20 X 28 to 24 X 36	1
ope	30 X 52 CO 30 X 54	1
3.50	30 X 60 to 40 X 60	1
3.80	13 X 14 to 16 X 24. 12.75 11.74 10.75 10.00 18 X 22 to 20 X 90. 17.25 17.25 17.25 17.25 18.50 17.25 18.50 18.25 18.50 18.25 18.50 18.25 18.50 18.25 18.50 18.25 18.50 18.25 18.50 18.25 18.50 18.25 18.50 18.25 18	
3.30	15 X 36 to 24 X 30	1
3.50	25.25 21.25 17.25 26 X 46 to 30 X 50. 24.00 22.50 18.06 30 X 52 to 30 X 54. 25.75 23.25 19.25	1
ata 6.50	34 X 56 to 34 X 50. 27.75 25.00 21.75 34 X 56 to 34 X 50. 39.35 27.75 24.00 30 X 60 to 40 X 60. 33.25 30.00 27.75	1
7.10	An additional to per cent, will be charged for all glass more than 40 inches wide. All sizes above 52	-
7.50 7.70 8.10	inches, will be charged in the at united inches bracket.	-
1de	Burhamville Glass Works	-
180		-
.150 .150 .180	FOX & COMPANY,	1
, 40	Manufacturers of	-
3.50		

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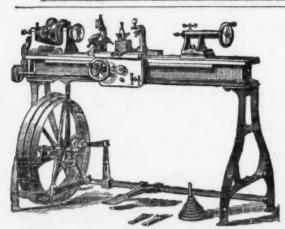
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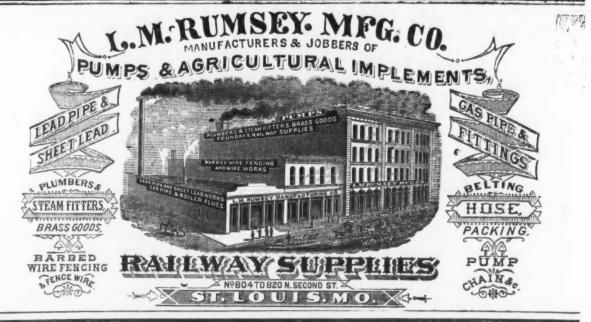
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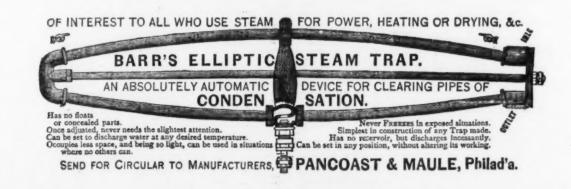
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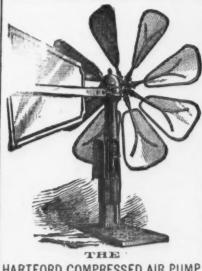
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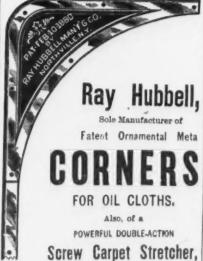
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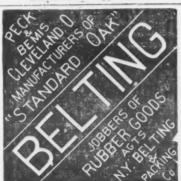
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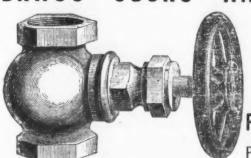
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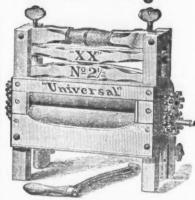
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.,	Cocks.—Brass, L. F. & C	9
	Iron Shed Pointed. 5 0 Cutlery.—Pocket, American Shear Co.'s dls 46 Butener Kaives, "Woods," Lap Boister, Square Handle. 5 Steak Knives. 111 Lap Boister, Oval Handle. dls &	0
200	Skinning. dis 20 Skinning. dis 20 Rutcher, Common Round Handle, "Woods". dis 20 Shoe Kulves, "Woods". dis 20	0000
7	Dividers.—Cook's	3
	Dog Muzzles,-Automatic dis ze	
	Doer Springs.—Torrev's Rod. P doz sp. Initation Torrev's Rod. Widos si. Gom Coll. Store distribution of the collection o	7 2
	Door Stops" Thurston's" 118 45	
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,	Drills	
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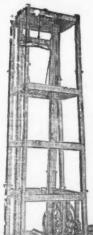
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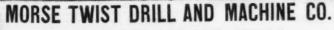


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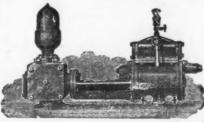
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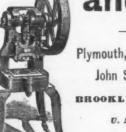


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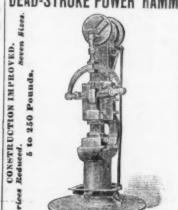
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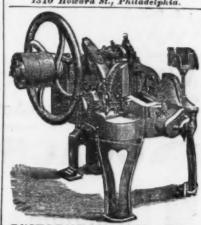
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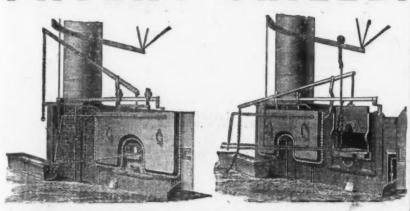
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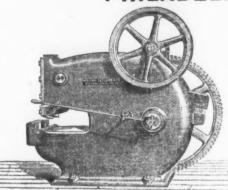
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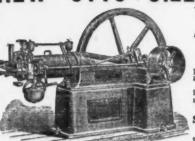
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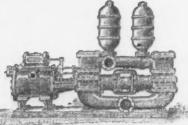
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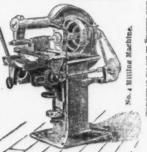


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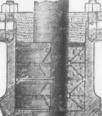
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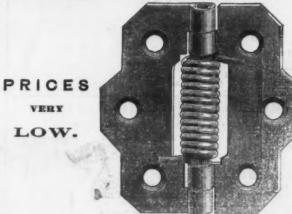
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